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COMMUNITY FACILITIES

SANFORD, NORTH CAROLINA



COMMUNITY FACILITIES

SANFORD, NORTH CAROLINA


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PREFACE

This report is one of several which are being prepared to guide the development of the Sanford Planning Area* by the Sanford Planning Board with the technical assistance of the North Carolina Division of Community Planning. Other studies included in the Sanford Planning Program are as follows:

1. The Economy - Published - August, 1963.
2. The Population - Published - June, 1963.
3. Land Use Analysis and Plan - To be published.
4. Central Area Proposal - Published - August, 1963.
5. Zoning Ordinance Revision - Draft Prepared - April, 1964.
6. Subdivision Regulations - Draft Prepared - February, 1964.
7. Neighborhood Analysis - To be published.
8. Public And Capital Improvements Programs - To be published.

* The Sanford Planning Area consists of the City of Sanford and its surrounding developing areas.

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	<u>CONTENTS</u>	<u>Page</u>
	Introduction	1
1	POLICE AND FIRE PROTECTION	
	Police Department	5
	Fire Department	8
2	SEWAGE DISPOSAL AND WATER SUPPLY	
	Sanitary Sewage Disposal	18
	Water Services	32
3	REFUSE DISPOSAL AND STORM DRAINAGE	
	Refuse Disposal	41
	Storm Drainage	46
4	AIRPORT	49
5	RECREATION	55
6	EDUCATION AND INFORMATION	
	Schools	70
	Industrial Education Center	80
	Library	81
7	HEALTH AND WELFARE	
	Lee County Health Center	83
	Lee County Hospital	84
	Mental Health Clinic	85
	Lee County Welfare Department	86
	Lee County Home	88
8	OTHER MUNICIPAL FACILITIES	
	City Hall	89
	City Garage and Service Lot	89
	Cemeteries	90
9	OTHER NON-MUNICIPAL FACILITIES	
	County Courthouse	91
	Steele Street Annex	91
	County Jail	92
10	SUMMARY	93

INTRODUCTION

The term "community facility," as used in this report, applies to local land parcels and major land improvements, including buildings and other structures and equipment permanently installed above and below the ground, which are owned or operated by a government or occupied by a public agency. Except for the Mental Health Center, facilities operated by private, nonprofit organizations have not been included, nor have privately-owned public utilities, such as gas, electric, and telephone properties.

A look at the Table of Contents and a reading of the text will reveal that there are many differences among the various community facilities. Authority and responsibility for providing a facility may lie at the municipal, county, state, or federal level. The functions of the facilities range from draining wastes from the community to providing an atmosphere conducive to the educating of its children. The complexity of the facilities range from the City Hall parking lot to the Sanford water treatment system; their individual impact on adjacent neighborhoods may differ as much as the impact of the airport and Dalrymple Park. It is not surprising that there are corresponding differences in the considerations involved in making decisions about these facilities: if, when, where, and how they are to be provided and used, and by whom, and for whom.

Despite the differences noted above, facilities have features in common that present similar planning problems to the agencies responsible for them:

1. The services performed by most community facilities are essential. The need for certain types of facilities eventually becomes so obvious that they are provided regardless of cost. Since these facilities will have to be provided sooner or later, it is a good idea to provide them when they cost the least. The same applies to facilities whose usefulness is not so well known.

2. For its greatest usefulness and least nuisance value (if it has any nuisance value), a facility usually requires special long-term locational relationships with the natural and man-made environment. (For example: sewer facilities must be related to topography, schools should have safe and convenient access, and government buildings should be so located as to encourage inter-agency cooperation, among other things). For these reasons planning facilities requires careful attention to present and future interaction between the facility or the agency occupying it and related facilities, populations, developments and other agencies.
3. The need of most facilities for special space requires not only that attention be given to selecting the right location, but that the problem be attacked early. Space for facilities, as for anything else, disappears as rapidly as a city grows. The land which is not built on is usually either unfit for use or rises in price as time goes on. Highways are the only public facilities that generally seem capable of acquiring land occupied by existing structures. As time goes on, new public facilities must usually be content with "leftovers." As a result, facilities which are considered essential are established at high land cost, or built where land costs are saved but location advantages are lost. And facilities which are considered anything less than indispensable to the survival of the community don't get built at all.
4. It is important to be sure the facility is the right one in the right place before it is built. Facilities represent a long-term, if not permanent, commitment of public money or credit. This means not only that mistakes cannot be sold off, but that even if the facility is a good investment, the public purse is limited in its purchasing power until the project is paid off. For these reasons, facility decisions require not only physical planning but long-range financial planning as well. The establishment of a facility permanently commits it to a particular location - school buildings and sewer plants cannot be moved to better locations for purposes of greater efficiency or lesser nuisance.

Non-Municipal Facilities

The provision of certain of the facilities discussed in this report is not the responsibility of the Sanford municipal government, which is sponsoring this report. However, there is good reason for the inclusion of the local facility needs and plans of nonmunicipal public agencies. For one reason, the relationships between these non-municipal establishments and municipal and private land uses are important, and the city, with the advice of the Planning Board, is responsible for maintaining the proper relationships. (The city may ensure proper public and private land uses through zoning private land use and planning municipal land use, and it may influence the location of nonmunicipal facilities through cooperative planning, advice, or zoning). Additionally, the City of Sanford is expected to provide sewer, water, and other services to nonmunicipal public establishments; advance notice of new demands allows more economical installation programs.

Financial Assistance and Financial Sacrifice

Many of the facilities discussed in this report as eligible for Federal financial assistance. Some of these grants and low interest loans are mentioned. A full list of them is contained in the "Handbook of Federal Aids to Communities", available at 40c from the Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402.

Through these financial assistance programs, combined with the Federal progressive income tax, communities in low income States like North Carolina are offered extra help in providing some of the facilities necessary to improve the local standard of living and give local children the same health and educational advantages available to children in richer States. More of this "equalizing" assistance should be forthcoming, especially in education. It is here highly recommended that Sanford take advantage of any such assistance available.

In spite of such assistance, however, the citizens of Sanford, along with those of other North Carolina communities will have to sacrifice a larger proportion of their purchasing power than many of their more fortunate fellow Americans to obtain the same level of public services. For their extra sacrifices, Sanford citizens rightfully expect that their contributions will be "invested" in the most productive manner. Fortunately, financial assistance is available to plan Sanford's "investment program," as well as carry it out, and fortunately the municipal government has embarked on such a program. This report is one element of this planning program.

The Usefulness of This Report

The recommendations in this report for specific improvements are few. The value of this report will lie in identification of the existing and potential functions of particular facilities, the assessment of their present and future adequacy, the identification of considerations involved in planning facilities, and the recommendation of courses of action for achieving and maintaining facility adequacy.

Many of the facts and judgments contained in this report will soon be obsolete. Their current value will decline not only because existing facility shortages will be filled but because the conditions that determine the need for facilities, and the opportunities for filling their needs, are bound to change as time goes on. For this reason the findings of this report should be kept up-to-date. Changes in specific facilities should be recorded as they occur. The report should be reviewed annually and revised in the light of more complete knowledge, more recent indications of needs, and new opportunities for filling needs.

Financial Planning

The Community Facilities report is expected to be a first step toward a special planning program for those particular facilities owned and operated by the City of Sanford. Plans for financing the "municipal facilities" will later be recorded in two documents: the Public Improvements Program and the Capital Budget. Both documents will be basically a schedule of municipal investment projects. The Public Improvements Program will schedule foreseeable projects over the coming twenty years; the Capital Budget will concern itself with the coming six fiscal years and will be much more detailed and definite. The initiation and maintenance of these programs involves:

1. Estimating future municipal revenue and credit potential.
2. Identifying necessary investment projects (facilities) and their priorities.
3. Scheduling the projects so they are consistent with revenue estimates and expected operating expenses.
4. Annually revising the documents; extending them another year and adjusting priorities, schedules, and revenue and expense estimates in view of better information.

Such programs are intended to:

1. Reveal the amount of revenue and credit remaining after fixed expenses are paid.
2. Reveal the approximate costs of future capital projects, and, in this way,
3. enable the city to make more realistic decisions on how the city can and should invest its money.



1. POLICE AND FIRE PROTECTION

FIGURE 1

MUNICIPAL FACILITIES

- ① - City Hall
Fire HQ
Police HQ
Fire Station # 1
City Service Shop
- ② - Fire Station # 2
- ③ - Water Treatment Plant
- ④ - Spring Lane Sewage
- ⑤ - Jonesboro Sewage Pl.
- ⑥ - Recreation Office
- ⑦ - Airport
- ⑧ - Buffalo Cemetery
- ⑨ - Jonesboro Cemetery
- ⑩ - City Dump

SANFORD, N.C.



SCALE



LAW ENFORCEMENT

Both the Sanford Police Department and the Lee County Sheriff's Department occupy special facilities. The Sheriff's Department is discussed under Other Nonmunicipal Facilities. The Police Department is discussed below.

SANFORD POLICE DEPARTMENT

The City Manager outlined the primary responsibilities of the Sanford Police Department in his budget for 1963-64: 1. Prevention of Crime; 2. Protection of Life and Property; 3. Apprehension of Offenders; and 4. Preservation of the Public Peace. Fulfilling these duties involves police officers in the following activities: patrolling, crime detection, crime investigation, pursuit and arrest of offenders, accident investigation, reporting and recording, testifying in court, traffic supervision, and impoundment of stray animals.

Personnel

The manpower of the Police Department consists of: one chief, two detective sergeants (plain clothes), three sergeants (one for each shift), 10 patrolmen, one meter officer, one dog warden, one secretary-clerk, five crossing guards (part-time), and 18-20 auxiliary policemen (volunteers).

The patrolmen undergo intensive training when they are first brought on to the force, both in classes and in service, under the supervision of a ranking officer. Full-fledged officers undergo periodic training. The State Bureau of Investigation and the Institute of Government (at Chapel Hill) are used as training resources.

The Police Auxiliary is a volunteer group, somewhat like the volunteer firemen. These men undergo training similar to that of full-time officers, and greatly expand the capacity of the regular force to handle emergency situations.

Facilities

The Department has one station, the Headquarters, annexed to the City Hall. Vehicles are parked across Charlotte Street in the City lot. The County jail is used for holding municipal prisoners. The privately financed Police Lodge is equipped with a firing range, which the men of the Department use for firearm training.

Vehicles

The vehicles of the Department include five patrol cars, one motorcycle, one pickup truck (dog warden), one motor scooter, and one detective division car.

Communication Systems

The geographically extensive, mobile activities of policing and the unpredictable emergency nature of the situations the force is expected to handle demand instantaneous, reliable communications. The Sanford Department maintains radios at police headquarters, in all police vehicles, and in the City Manager's car. The police headquarters also has radio contact with the fire department stations and vehicles, the sheriff's department, and civil defense headquarters. The latest equipment in police radio communications has recently been installed in department headquarters. The new device extends the direct communications range of the department up to 60 miles, and ties it into a growing State-wide network of law enforcement agencies that can simply dial each other by radio.

Facility Plans

City officials agree that the Police Department is short of space. Although the Department has gained the use of the former office of the City Manager adjacent to headquarters, the recent renovation of the City Hall deprived the Department of a briefing room. It appears likely that both the City Hall functions and the Police Department, together or separately, will in time be relocated near the present Lee County Courthouse. City Hall will be located there for reasons mentioned in the City Hall section of this report, although it is not expected to relocate for another ten years. The Police Department will be located near the Courthouse to gain the advantage of convenient access to the County Jail, Superior Court, and the Sheriff's office. There is also some advantage in having the Police Department close to the City Manager's office.

The present question is whether the Police Department should be provided with the space it needs by building a new station near the County Courthouse or by making some short-term arrangements at its present location. Several considerations must be weighed in the decision.

In favor of a new station at the present time:

1. Building a new station near the Courthouse and Jail at the present time would allow it to begin taking advantage of the proximity to Court, Jail, and Sheriff operations immediately.

2. It is not absolutely necessary that the Police Department be adjacent to City Hall, although there are advantages in having direct communication between the City Manager and Police Headquarters, and the sharing of secretarial personnel is more convenient.

In favor of a temporary arrangement:

1. Combined construction and maintenance costs can be reduced by including space for the Police Department when the new City Hall is finally constructed.
2. Not considering its space limitations, the present location of the Police Department is generally satisfactory, in spite of inconveniences caused by distance between the station and the related County facilities.
3. As reported in the section on City Hall, a renovation project is planned for the street level portion of City Hall within one or two years. This project may provide an opportunity to rearrange this space to provide adequate, efficiently arranged quarters for both the Police Department and the City Clerk's operations. If this project cannot provide adequate space, there is room behind the Police Department's building for some expansion.

The arguments given above concerning how to provide space for the Police Department will have to be individually weighed and supplemented by City officials before a decision is made. The recommendation is made to investigate thoroughly the feasibility of providing space at the present location before making a decision to build a new station.

FIRE PROTECTION

Responsibility for preventing and fighting fires in the Sanford Area is divided between the Sanford Fire Department and rural volunteer fire companies. Only the Sanford Fire Department, whose ordinary service area is limited by the City's Corporate Limits, will be discussed here. As Sanford's built-up area expands, presumably annexation will expand the service area of the Sanford Fire Department.

SANFORD FIRE DEPARTMENT

A fire department exists to minimize damage to persons and property from fire, explosions, natural disasters and enemy attack. Along with its fire fighting role, its function includes fire prevention through hazard detection and public education. In case of large-scale disaster, the fire department would form the core of the volunteer rescue and damage control force.

The Sanford Fire Department is directly responsible for fire prevention and control within Sanford's corporate limits. Upon request, it will fight fires beyond these limits in adjacent areas, ordinarily retaining a reserve within the City while it does so. The City has a mutual aid agreement with the rural fire departments in Lee County and with Raleigh and Fort Bragg for great emergencies.

Besides the men and equipment normally identified with it, the Fire Department relies on the hydrants of the City water system, backed up by high-capacity mains, elevated storage tanks and high-capacity pumps, to deliver large volumes of water at high pressure. Another weapon for prevention of fire damage and its spread are the enforcement of the Sanford Minimum Housing Ordinance, the North Carolina Building and Electrical Codes, and the Sanford Fire Prevention Code.

Personnel

The manpower of the Fire Department consists of 6 full-time people and 35 volunteer firemen. The full-time men are the Fire Chief, his Assistant and four drivers. The drivers and volunteer personnel are assigned to specific vehicles to form three "companies" - two "pumper" companies, each assigned to a pumper truck, and one ladder company, assigned to the pumper-plus-ladder combination truck or "quad".

Vehicles

Year Model	Type	Pump Capacity (gal. per min.)	Booster Tank (gal.)	Hose	Ladders	Location (station)
1948	Pumper	750	100	1300'	standard	No. 2 Lee Ave.
1939	Pumper- Plus-Ladder ("Quad")	750	100	750'	237' incl. 50' ext.	No. 2 Lee Ave.
1958	Pumper	1000	300	1350'	standard	No. 1 City Hall
1925	Pumper*	750	100	1000'	standard	No. 1 City Hall
1964	Chief's Station Wagon					

* (This vehicle is not counted in N.B.F.U. ratings because of its age. It does not ordinarily report to fires.)

Stations

The equipment and full-time personnel of the Department are maintained at the City's two fire stations:

No. 1: In City Hall on Charlotte Street, contains department headquarters, an active pumper, the 1925 reserve pumper, and limited barrack facilities.

No. 2: Near the courthouse on Lee Avenue, houses an active pumper and the pumper-plus-ladder, or "Quad" truck. It has adequate barrack facilities.

Alarms and Communications System:

The City is equipped with an automatic repeating fire alarm system, with 98 alarm boxes placed in major public buildings, in some manufacturing plants, and at outdoor locations throughout the City.

The Fire Department has a reserved telephone with an extension into police headquarters. The three newest fire trucks and the Chief's car are equipped with radios operating on the same frequency as the Police Department headquarters and vehicle radios, and new walkie-talkie type radios have recently been obtained for communications at the scene of large fires.

Operations

Training: The Department has recently stepped up the frequency of drills to two per month.

Inspections: The Department inspects the buildings of the central business district, the schools, and the hospital four times each year.

Nonfire Disposition: Two full-time men are on duty at all times, one at each station.

Fire Responses

For fires in the central business district, the Department ordinarily responds with the two pumper companies (one from each station), and sends for the pumper-ladder truck if it is needed. In residential areas of the City both pumpers are dispatched also. The number of volunteers normally responding to fires is 18. The Department will dispatch one pumper company in response to requests for aid from outside the city limits where water is available from hydrants. (Therefore response to fires outside the city limits are limited to areas where the Sanford water system extends.)

Insurance Rating

The North Carolina Fire Insurance Rating Bureau is employed by a group of fire insurance companies, the National Board of Fire Underwriters, to determine the fire risks existing in communities where these companies have policy-holders. The fire insurance premiums for the property owners in a city are set according to the rating given by the Bureau using standards developed by the National Board of Fire Underwriters. Sanford was inspected by the Bureau in March of 1962, and several recommendations for improvement were made, including:

1. That the Fire Department be organized on the basis of two pumper companies and one ladder company.
2. That enough full-time professional firefighters be employed so that one would be on duty with each of the three fire companies at all times.
3. That certain auxiliary equipment be added to the Department's stock.
4. That two pumpers and one ladder truck respond to all fire alarms in the central business district and two pumpers and adequate ladders respond in other districts.

5. That a complete and comprehensive training program be established for the Fire Department.
6. That the latest edition of the Fire Prevention Code be adopted, and that adequate inspection service be maintained to enforce the fire prevention code that is in effect.

Adoption of the full recommendations of the Bureau, including some concerning the City's water supply system, would qualify Sanford to move up from a rating of Class 7 to Class 6, which would result in a drop in fire insurance rates.

"Almost any city over 10,000 population should be at least as good as Class 6 if it has a water system that is not subject to periodic shortage, an active well-drilled fire department with standard fire-fighting equipment, and if standard fire safety regulations are enforced." (Management Practices for Small Cities, International City Managers' Association, 1959, page 332.)

Plans

In addition to maintaining its present fire-fighting force fully equipped and in top condition, Sanford must look ahead to coping with the fire problems of a community that is stretching farther out into the country and is constantly growing in population and property value.

The City government is now contemplating some major changes in the disposition of its fire department to overcome old problems that are not improving and to be prepared for current and future developments.

Meeting the Need for Fire Stations

The continual growth of the City of Sanford in terms of people and property can be expected to require periodic adjustments of the fire fighting forces, their equipment, and their facilities. The Fire Chief reports that more full-time firemen are needed at present, and that the present stations are not sufficient to house them. Another problem, that of the interference of the Seaboard Airline trains with the response of the No. 1 Station to fires west of the tracks, has been aggravated by the growth of the city to the north and west. These and other problems indicate that Sanford's fire station situation should be re-examined to get some idea of what new station space is needed and where it should be placed.

It is recommended that decisions on additional fire station space remain tentative until they have been reviewed and approved by engineers from the North Carolina Fire Insurance Rating Bureau. Rating Bureau personnel are authorities on fire protection facilities and are familiar with the Sanford situation with regard to fire hazards. The review service is performed without charge.

As a contribution to the process of choosing the type, size and location of additional fire station space in Sanford, some location standards provided by the National Board of Fire Underwriters are applied to Sanford, and some principles of planning station buildings are cited in the following sections.

Planning Station Locations

The table below, adapted from information in the "N.B.F.U. Special Interest Bulletin, No. 176", February, 1963, shows the new standards for recommended maximum road distances between fire stations and properties located in various types of districts.

Maximum Running Distances for Fire Companies

<u>Type of District</u>	<u>Type of Company</u>	
	<u>Pumper</u>	<u>Ladder</u>
High Value: Central Business District, other mercantile districts, manufacturing, schools, hospitals.	1½ miles	2 miles
Urban Residential (Average of less than 100 feet between structures)	2 miles	3 miles
Scattered Residential (average of more than 100 feet between structures)	4 miles	4 miles

For pumper companies, the distance standards are based on the amount of time it takes for the first pumper to arrive at the fire after an alarm has been received. The standards for ladder companies are also based on response time, but as can be seen from the table, ladder companies can cover a larger area than pumper companies because the time factor is not as crucial.

Because the standards are based on time, they must be adjusted for conditions that increase travel time, such as steep grades, heavy traffic or railroad crossings.

FIGURE 2

EXISTING FIRE COVERAGE

1.5 miles
Pumper coverage for high
value property.

2 miles
Ladder coverage for high
value property.
Pumper coverage for urban
residential areas.

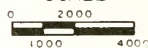
3 miles
Ladder coverage for urban
residential areas.

Areas where coverage is
frequently inadequate as
a result of trains block-
ing the movement of equip-
ment from Station No. 1
to northwest Sanford.

SANFORD, N.C.



SCALE



FEET



The standard running times for each "type of district" are affected by the flows of water required to feed the fire hoses in a particular district. The table above was adjusted for the fire flows recommended for various districts in Sanford by the N. C. Fire Insurance Rating Bureau in March, 1962.

In Figure 2, the running distance standards of the N.B.F.U. are applied to Sanford's existing fire station locations to determine what coverage the companies in these stations provide. The coverages shown are somewhat exaggerated because air distance rather than road distance is used for measurements.

The shaded areas indicate where the expected coverage of the stations could be interfered with by the Seaboard Airline tracks. These shaded areas do not necessarily indicate that service in these areas is substandard. They only indicate that certain types of property located in these areas might be subject to extra risk because (1) they are beyond the maximum running distance for vehicles from Station No. 2 for that particular type of property and (2) trains could interfere with prompt response from Station No. 1. Subject to the qualifications concerning actual running time and type of property that were mentioned above, it appears from Figure 2 that the present fire stations provide good coverage.

Station No. 2 provides pumper and ladder coverage adequate for High-Value areas over most of the city. South of Station No. 2, the only part of the city not covered by High-Value coverage is a small portion of Jonesboro. The range of the pumper company and ladder company at No. 2 Station for residential fires extends beyond the corporate limits at all points not covered by Station No. 1, and would provide protection for much additional dense residential development except to the southeast of Jonesboro.

Figure 2 also shows that all of northern Sanford is within the range of the Station No. 1 pumper for High-Value districts and is well within its maximum range for residential property. The difficulty in this area is the Seaboard Airline tracks that lie between Station No. 1 and west Sanford. According to data obtained from the State Highway Department, 20 trains per day pass through Sanford on the Seaboard tracks, including 12 passenger and 8 freight trains. Some of these trains take several minutes to pass through, and the only underpass in Sanford is at Endor Street. This means that firefighting west of the tracks sometimes has to wait until the trucks from Station No. 2 arrive even though Station No. 1 is closer. The map also shows that the area west of the tracks is the most critical area for Station No. 1 to cover, because Station No. 2 provides good coverage for almost all of that portion of Sanford east of the tracks. Station No. 1 clearly rates lower than Station No. 2 in terms of location.

FIGURE 3

PROPOSED FIRE COVERAGE

ARCS

1.5 miles

Pumper coverage for high value property.

2 miles

Ladder coverage for high value property.

Pumper coverage for urban residential areas.

3 miles

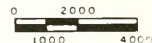
Ladder coverage for urban residential areas



SANFORD, N.C.



SCALE



FEET

Station No. 2 not only provides good access to southern Sanford, but also is in excellent repair and has adequate indoor space for additional full-time personnel, and adequate outdoor space for drills and future expansion. Station No. 1, on the other hand, has no space for building expansion and cannot house additional full-time personnel.

Possible Arrangement of Fire Stations

The discussion just completed suggests that relocating the contents of Station No. 1 to a location west of the Seaboard Airline tracks could:

1. provide coverage to the areas of the City not covered by Station No. 2.
2. avoid the problem of train interference.
3. provide the additional space required for Department expansion.

Figure 3 shows roughly the area that could be covered by a station located in the general area indicated. In choosing the location, a balance must be struck between extending coverage over potential annexations, on the one hand, and keeping the station close to the high-value central business district, on the other.

Other considerations of importance include:

1. the access changes resulting from the Thoroughfare Plan.
2. the High-Value (mercantile, industrial, institutional) districts indicated in the Land Use Plan.

Planning the Site and Building

The choice of a fire department location will, in part, be affected by site requirements. The National Board of Fire Underwriters, in "Special Interest Bulletin No. 176", provides the following guides:

"A site at an intersection is good as it permits response in more than two directions. Stations should be set well back from the curb line especially where the street is narrow. The lot should be of ample size so as to provide parking facilities for the men and adequate space for holding company 'drills.'"

Concerning the nature of the building itself, the following quote is taken from the book Management Practices for Smaller Cities by the International City Manager's Association:

"Every fire station should be built to house at least one and preferably two more pieces of apparatus than will be necessary when completed, with a minimum apparatus floor area capable of housing at least three fire department trucks. If the average fire station has a life expectancy of at least 50 years it is poor administration to build one that will be outgrown in 10 or 15 years. This error is most common when planning stations for present single-unit companies in residential areas. Sooner or later it may be necessary to add such units as ladder truck, brush fire truck, rural fire truck, squad truck, or chief's car. Until such units are added, any extra space will be valuable for housing the fire department's reserve or auxiliary apparatus."

Coordination With Other Plans

As indicated above, new fire stations should be coordinated with existing and planned land use and transportation arrangements. In addition, the major outlays involved in acquiring land and buildings and major pieces of equipment for new stations should be anticipated several years in advance to avoid distortions of the budget. Ideally such purchases will be scheduled into the Capital Improvements Program, after comparing the need for such facilities with other major items of capital outlay.

2. SANITARY SEWAGE DISPOSAL

- WATER SUPPLY

SANITARY SEWAGE DISPOSAL

Under the 701 Planning Program, the Division of Community Planning is not authorized to undertake detailed engineering studies in Sanford. But within the limits of its authority and competence, an attempt is made here to reveal the existing and developing problems concerning Sanford's sanitary sewage disposal facilities and to suggest general courses of action to cope with these problems.

Sewage Disposal in Urban Areas

Urban areas produce large quantities of liquid wastes and solid wastes that are mixed with water through use (such as in wash water) or mixed with water for convenient disposal. These wastes unless properly disposed of are a potential threat to community health and livability. Whether such wastes are disposed of privately or through community action, ensuring their proper disposal is a government responsibility.

Municipal Systems

Urban communities the size of Sanford, in which the average lot size is much less than one acre, cannot safely rely on individual disposal systems. Such communities, are best served by public systems of sewage disposal in which water-borne wastes are piped from properties to central treatment plants where solids are removed and the remaining liquids are treated before being discharged into natural streams. This, of course, is the type of system that is owned and operated by the City of Sanford.

Industrial Wastes

The treatment facilities for public systems are primarily designed to handle "domestic" sewage, that is, wastes that are similar in physical or chemical properties to those produced in homes. Certain industrial wastes cannot be handled well by these treatment processes. Chemical wastes may interfere with the treatment of domestic sewage or actually damage the collection system and plant; they may be unpurified by the treatment system and cause pollution in the streams beyond the plant. Such industrial wastes call for special treatment. Depending on their nature, they may be pretreated before they enter the public system, or they may require a different treatment facility entirely. In such cases a municipality is justified in requiring that the industry producing the wastes take responsibility for their treatment and pay the full cost of any special arrangements the city must make to handle such wastes.

Septic Tank Systems

Where the density of urban development is not expected to exceed one family per acre and soil and drainage conditions meet certain standards, septic tanks may be acceptable substitutes for public sewers in handling domestic wastes. Septic tanks rely on the surrounding soil to absorb waste fluids, while the solids accumulate in the tank. Correct operation of septic tanks requires cleaning every 2 or 3 years. The cost and annoyance of maintaining septic tank systems often leads to neglect which in turn leads to problems of overflow, ground water contamination and odors. Soils in some areas around Sanford are not suitable for the use of septic tanks, regardless of how carefully they are operated. Urban development of these areas will require the use of a community sewage collection and disposal system.

Package Plants

There may arise situations where the use of a private or semi-public "package plant" may be appropriate for providing domestic sewage treatment. A "package plant" is a miniature sewage treatment plant, designed to give 90% treatment to the sewage of isolated populations of from 50-200 persons. It may be used where septic tanks are not acceptable and where municipal sewer extensions are not available. The collection system for carrying water in a conventional public sewer system is also appropriate for a "package plant" system, and package plants, like large municipal systems, rely on nearby streams for discharging their treated wastes (effluent). It is wise municipal policy to control the installations and use of such systems. A well-laid out private sewer system can be, in time, simply tied into the municipal system and the package plant shifted elsewhere. Also, the municipality has an interest in maintaining the purity of local streams.

Privies

According to the report of the sanitarian of the Lee County Health Department, privies are still used by some families in the Sanford Planning Area. Privies are considered by sanitation authorities to be appropriate for rural areas, but are definitely unsuitable in urban situations. Some privies are still in use in the City of Sanford, despite the fact that a City ordinance prohibits their use. Privies can also be found just outside the City limits, in areas much too dense for the use of these devices, or even septic tanks. The use of privies in such congested areas is a health menace, not only to the inhabitants of these areas but to the community as a whole. The installation of public sewer, public water and acceptable water closets coupled with active code enforcement is the only solution to this health problem.

Sewage Disposal Authority and Policy in Sanford

Sanford has for many years had State enabling legislation both to control the disposal of human and other wastes in the community through the passage and enforcement of ordinances and to operate sewage disposal services. In operating a disposal system, the City exercises the following authority granted to North Carolina cities:

1. to build, own, operate, protect, control and regulate a sewer system;
2. to extend its sewer system beyond the corporate limits in the city's own terms;
3. to enter into contracts with parties who want to connect to the sewer system;
4. to prescribe rates and charges for service;
5. to charge higher service rates to property outside the City limits.

On the other hand, the City is required to extend sewer services, where requested, into areas annexed unilaterally (1959 Annexation Statute).^{*} Sanford has established policies concerning sewer service which can be found in the Code of Ordinances. They regulate charges, extensions, connections and other matters.

Sanford's Municipal Sewage Disposal Operation

The City of Sanford uses the customary method of channeling sewage from individual properties to sewage plants through underground pipes which are laid so that the sewage flows downhill by the force of gravity. (When moving the sewage by gravity is not possible, pumps and "force mains" are used, but the cost of purchasing, installing and maintaining them discourages their use). The many sewer lines that collect the sewage from individual properties and small areas of the City empty into larger lines, called "collectors", "interceptors" or "outfalls" which in turn carry the sewage to the treatment plants, where the solids are removed and the remaining fluids are treated until they can be dumped into the nearby streams causing minimum pollution. The major parts of Sanford's two existing sewer systems are shown in Figure 5.

^{*} A statute enacted by the N.C. General Assembly in 1959 permits cities to annex areas adjacent to existing city limits without a vote of the people annexed, providing certain stated requirements for population densities and municipal services are satisfied.

Meeting the Demand for Service

The Sanford Area is continually growing in population, and its built-up portion is expanding. This growth brings with it an unavoidable demand for sewage disposal arrangements. There are several reasons for believing that the City of Sanford will be involved in supplying a substantial portion of this demand, through the financing, constructing, operating, and maintenance of its sewer system.

1. The City is committed by established policy to treating any sewage produced within the corporate limits, and extending service lines upon request within this area. Both of these pressures on sewer facilities can be expected to continue.
2. The City is committed by State Law to extension of sewer (and water) lines into areas that are annexed unilaterally by the City, (1959 Annexation Statute) and the City can be expected to annex areas by this method in the future.

In addition to these existing commitments to handling growing sewage volumes and locations, there are other reasons for the City of Sanford to participate actively in fulfilling expanded sewer service demands.

1. Providing the opportunity to connect to the City's sewer system (at a fair price) may induce private developers to use the municipal system instead of using septic tanks, which are often undesirable. Where developers are not permitted to use septic tanks, they can be expected to connect to the municipal system.
2. Although it is possible to form "sanitary districts" independent of the City to provide sewer service to residents of drainage areas not served by municipal sewers, over-all administration of old and new sewer systems in the drainage areas around Sanford will probably be most economical if performed by the City alone rather than by more than one agency. Administration by a single agency will also avoid conflict over the use of streams for the discharge of treated sewage.
3. Because of the desirability to homeowners of connections to public sewer, sewer extensions have some power to guide land development. Sewer extensions can be used to steer growth toward areas where public services such as schools, water lines, transportation facilities, etc., either have excess capacity or will be cheaper to provide for other reasons. In this way, sewer extension policy can reduce the total cost of government services. Sewer extension policy consistent with the Zoning Ordinance will reinforce the Zoning Ordinance in achieving the Land Use Plan by reducing requests for zone changes. The Subdivision Regulations can also increase the guidance power of sewers by making the use of public sewer more attractive to developers.

Future Sewage Volumes

At a minimum, the volume of sewage produced in a city can be expected to increase at the same rate as the city's population. The population within Sanford's corporate limits has been growing at a rate equivalent to 18% every 10 years. If this growth rate continues, Sanford's sewage production will increase about 12% in the 7 years between 1963 and 1970. As the existing plants have reached their hydraulic capacity, sewage treatment capacity will have to increase by 12% at a minimum. (The above estimate is made on the assumption that the additions to Sanford's population will be served by public sewer, which seems quite likely to be the case.) A faster rate of growth, the extension of sewers into unincorporated areas, and the connection of waste producing industrial plants to the City sewer system could very easily double the additional capacity required by 1970.

Physical Factors In Sewer Planning

An examination of the special characteristics of Sanford's physical situation indicates the value of a professional sewer survey on which to base policy on continued expansion.

Topographic Conditions

In order to make use of gravity, a separate sewage collection system must be installed to each large "drainage basin" that is to be served. (A "drainage basin" or "drainage area" is any area drained by a creek or river and its tributaries. The smaller areas drained by the tributaries themselves are also "drainage basins".) Up to a certain size and if topography is favorable, the collection systems can be joined and their sewage treated at a single plant. But Sanford is situated on the landscape in such a way that sewage must be collected and treated at more than one point. Two systems are already in use, and further growth may require more.

Sanford is situated on a six-sided hill from which water is drained off in six different directions by different groups of streams. The streams and their drainage basins are illustrated in Figure 4. The drainage basins are named after the streams which drain them.

Big Buffalo Creek (1) and Little Buffalo Creek (2) empty into Deep River, so these basins are part of the larger Deep River drainage basin. Gastor's Creek (3) empties into the Upper Little River south of Jonesboro, as does Carr's Creek (4). Wallace Branch (5) and Lick Creek (6) join to form Lick Creek. The Deep River, Lick Creek and the Upper Little River in turn all empty into the Cape Fear River, so that the whole area around Sanford is part of the Cape Fear drainage basin.

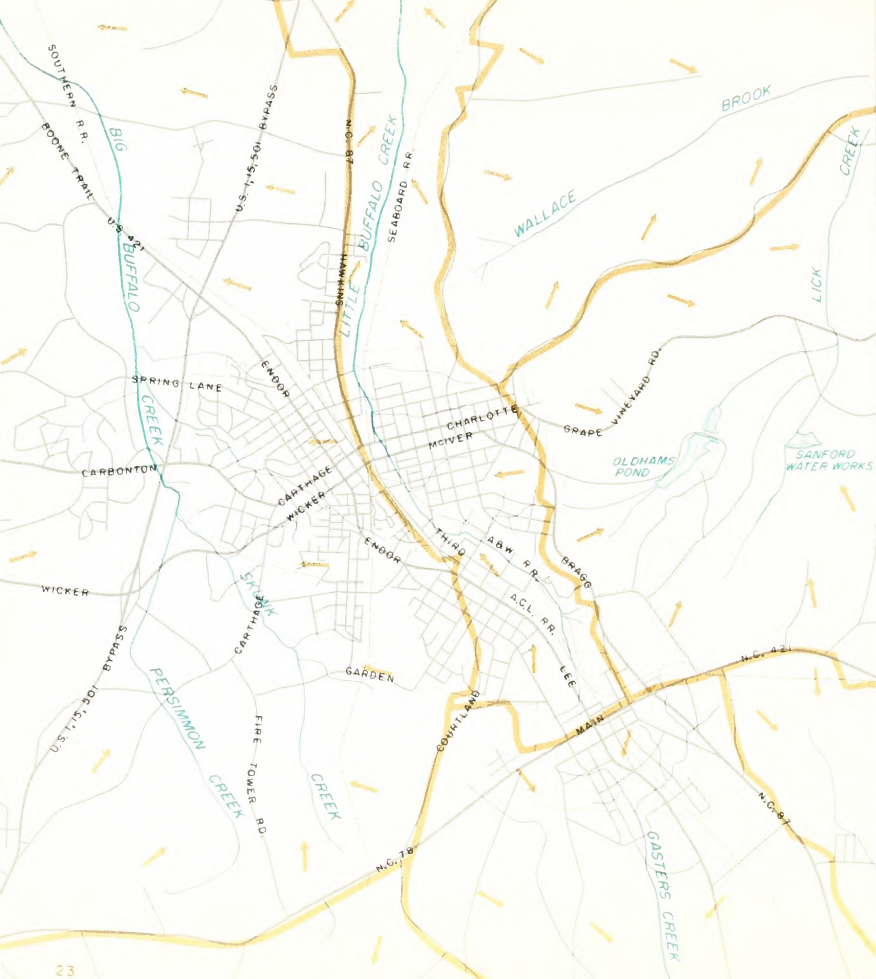


FIGURE 4

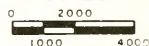
DRAINAGE BASINS

- DIRECTION OF RUNOFF
- LIMIT OF DRAINAGE BASIN

SANFORD, N.C.



SCALE



FEET

At this time Sanford's urban development extends deeply into only three of these six drainage basins: The City Limits stop short of the Wallace Branch Basin and the Carr's Creek Basin. (The recent extension of the City limits, to take in the Industrial Education Center, invaded the Lick Creek drainage basin for the first time.)

The Little Buffalo Creek drainage basin drains the whole east side of town and follows the Creek north to the Deep River. The low ridge on the west side of this basin made it necessary to transport the sewage collected on the east side through to the Big Buffalo basin by laying a pipe 33 feet deep under the ridge. (The ridge runs along Hawkins Avenue, and the pipe was laid beneath Chisholm Street.) This action, though expensive, was cheaper than pumping the sewage over the ridge or building a separate treatment plant for the Little Buffalo basin.

Since this was done, all the sewage placed in the Sanford systems has flowed to either the Spring Lane plant, which lies in the Little Buffalo Creek basin, or to the Jonesboro plant, which lies in the Gaster's Creek basin south of Jonesboro.

The solution that was found for the problem of treating sewage from East Sanford does not appear to be practical for the other drainage basins bordering the present sewer system. If each of these basins were to be substantially developed in the future, each would require a complete collection system and treatment plant of its own. If the City of Sanford does not want to find itself committed to paying a very high cost for a given number of additional sewer customers, it must make definite policy decisions concerning when or whether it will be willing to extend service to land development in each of the various drainage basins. If service extension to a particular area is feasible, policy will have to be made on financial terms in order to ensure that persons receiving the benefits of the sewer service extensions pay the extra costs that are involved. (Other considerations besides sewer cost will be involved in policy decisions on this matter.) Drainage basin conditions would be important to the City sewer operation even if no more extensions were made, because sewage production within the area already served is growing and will require new treatment plants at new locations in the near future.

Stream Conditions

It has been shown that the "lay of the land" around Sanford complicates the City's sewage problem. Another natural condition that must be taken into account is the amount of water that flows in the streams near the City.

It was mentioned earlier that the treated fluids from sewage plants are dumped into nearby streams. This is a universal practice, as there is no better alternative. But the "effluent" from the sewage plant of standard design is not pure, and the receiving stream is relied upon to continue the purification process by exposing the effluent to dissolved oxygen and the effect of sunlight. (Although more complete plant treatment is possible, it involves a great deal of cost.) Any given stream can receive only so much sewage effluent and still maintain its purification qualities; in general, the smaller the stream, the less it can take.

The State Stream Sanitation Committee has been given the authority to determine the best use of every stream in North Carolina and to ensure that each stream is maintained at the level of purity appropriate to its use. The Committee has classified the streams surrounding Sanford as class "D", to be used for "agriculture, industrial cooling and any other usage, except fishing, bathing or as source of water supply for drinking, culinary, or food-processing purposes."

The classification is not unreasonably high; the waters of Big Buffalo Creek, into which is dumped 80% of Sanford's sewage effluent, eventually flow into the Cape Fear River above the point where Sanford takes its drinking water. (The Cape Fear River, of course, has a higher classification, A-II, so that it can be used by Sanford and other cities as a source of drinking water.)

The proper stream quality must be maintained even during the dry summer months. The Stream Sanitation Committee requires the classification standards be met at all stream-flows above the "7-day, 10-year low-flow," or the rate of stream-flow that occurred during the driest week in the last 10 years.

It is true that streams that drop below minimum flow requirements for a given amount of sewage effluent are not automatically ruled out for sewage disposal purposes: low-flow stream overloading can be prevented in some cases by storing upstream water during wet periods to increase stream flows during dry periods (an expensive device) or the storing of sewage effluent in lagoons during dry periods for release when the streams are full (a less expensive solution, usually). But the additional expense of these methods suggests that they should not be decided upon until it is found that there are no adequate streams nearby.

According to figures on stream flow volumes provided by the State Stream Sanitation Committee and estimates of the number of persons using Sanford's sewers, the low-flow capacities of both streams used for the City's sewage effluent (Big Buffalo Creek and Gastor's Creek) have already been exceeded even for full standard treatment (full standard treatment is about 90% removal of wastes.) The only streams that appear as reasonable prospects for future disposal, other than the Cape Fear itself, are the Deep River, Lick Creek, and the Upper Little River, all of which have sizable average flows.

Even these larger streams, however, have limitations revealed by their low-flows, which means that up-stream water reservoirs, storage lagoons for effluent, or extra-high sewage treatment capacity will be necessary if additional sewage is to be produced in their drainage basins.

On the Deep River, help for Sanford's problem could be forthcoming if a proposal of the Army Corps of Engineers is accepted by Congress. Control of flow in Deep River has been included in the proposal by the U.S. Army Corps of Engineers in their Comprehensive Report on the Cape Fear River Basin. In addition to the New Hope Reservoir project on the Haw River there would be two dams and reservoirs built on the Deep River, one at Randleman and one at Howard's Mill, to control the Deep River. These dams and reservoirs are proposed to control floods and increase minimum stream flows during dry periods. If built, these reservoirs would probably improve the Deep River's capacity sufficiently to handle any volume of sewage effluent that the City of Sanford could produce.

As for the Upper Little River and Lick Creek, this reporter is unaware of any proposed projects on these streams that would increase their low-flow capacity to handle effluent. Additional use of these streams would require something more than the standard sewage treatment plant alone.

These tentative limitations on stream capacities, like the situation with regard to drainage basins, indicate the economic importance of a policy on sewer service in areas of prospective growth that is based on a thorough, reliable assessment of the Sanford area's physical situation.

FIGURE 5

SANITARY SEWAGE SYSTEM

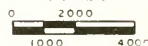
- TREATMENT PLANTS
- 12" OR LARGER SEWERS
- 15" SEWER (33' DEEP) BETWEEN
LITTLE AND BIG BUFFALO
DRAINAGE BASINS
- EXISTING SERVICE AREAS



SANFORD, N.C.



SCALE



FEET

Condition of Municipal Sewers

An estimation of the unused capacities of the components of the sewer collection systems is beyond the level of detail that can be considered in this study. It was learned, however, that at least one pipe in the collection system is now close to capacity. This is the 15" pipe laid in the 33 foot deep trench under Chisholm Street which allows sewage to flow from the east side of Sanford to the Spring Lane Plant. This pipe has a hydraulic capacity which exceeds the hydraulic capacity of the Spring Lane Plant, but during rainstorms the fluid in the pipe backs up. Further development on the east side of Sanford should be limited until this condition is improved.

The excessive flow in the pipe mentioned above during rainstorms points up a problem that goes beyond the sewage collection system. No sewer system can be completely watertight, and allowance is made to handle the flow caused by infiltration of the water that seeps into the ground during rainstorms. But excessive infiltration can also cause sewer plants to be designed to handle much larger flows than would have to be handled under a tight pipe system, and often results in the dumping of untreated sewage directly into streams to prevent damage to the treatment plant during rainstorms. The latter problem is the case in Sanford today; every sizable rainstorm sends a rush of waste-laden water down to the sewage plants, and this flow must be diverted, untreated, past the plants and into the streams.

Several actions can be undertaken to handle the problems of low pipe capacity and infiltration:

1. The faulty parts of the collection system could be detected and repaired to reduce infiltration.
2. Underground holding reservoirs could be installed to even out the flow of fluid through bottlenecks in the system.
3. Overloaded segments of the system could be replaced with larger units.
4. Industries which discharge large amounts of liquid wastes into the system could be required to install reservoirs to even out the flow of their wastes over 24-hour periods.

Each of these alternatives involves large expense; the appropriate solution requires the attention of a sanitary engineer.

Treatment Plants

Spring Lane Plant: Sanford has recently been approved as the recipient of a Federal grant to help finance the improvement of the Spring Lane sewage treatment plant. The events leading up to this grant began in 1956, when the State Stream Sanitation Committee, empowered to regulate the use of North Carolina's streams, classified Big Buffalo Creek and the other streams around Sanford as Class "D". In 1959 the Committee issued the Comprehensive Pollution Abatement Plan for the Cape Fear River Basin, in which the City of Sanford was instructed ". . . to determine additions and improvements needed to permit (the Spring Lane Treatment Plant) to perform in such a manner as to protect the receiving stream under present loading conditions and provide capacity for expected future growth."

As a result of this directive, Sanford retained an engineering firm, William F. Freeman, Inc., to design the improvements to the Spring Lane Plant and applied for a Federal grant to help finance these improvements. The Freeman report was completed in 1960.

When the programmed improvements to the Spring Lane Plant are completed, the hydraulic capacity of the plant will remain at its present figure of 1,500,000 gallons per day. (In engineer's shorthand, this is 1.5 MCD, or 1.5 million gallons per day.) Although hydraulic capacity will remain the same, the sewage entering the plant will be more completely treated, it will have up to 90% of its pollutants removed, instead of the 44% or so that is removed with the present plant. The decision was made not to increase the hydraulic capacity of the plant because (1) Big Buffalo Creek, the receiving stream, could not handle any more effluent and (2) any additional hydraulic capacity required can better be provided in a plant located where it will add to the area that can be served, as well as add to the amount of sewage that can be handled.

Recent records of the Spring Lane Plant indicate that the plant cannot handle much more sewage than it is now receiving. Its 1.5 MCD capacity is now often reached on normal days, and rainwater infiltration into the collection system frequently makes it necessary for plant attendants to direct raw sewage directly into Big Buffalo Creek to avoid damage to the plant.

Jonesboro Plant: According to the 1960 Freeman report, the Jonesboro Plant, unlike the Spring Lane Plant, has been operating efficiently. But like the Spring Lane Plant, its load is fast approaching or exceeding its hydraulic capacity. The Plant Superintendent reports that the plant hydraulic capacity is reached during peak hours even on some rainless days, and is exceeded during rainstorms. Plant records show that the annual amount of sewage handled in the plant has gone up rapidly in recent years, increasing 11% between 1960 and 1961 and another 16% between 1961 and 1962.

Like the Spring Lane Plant situation; stream-flow figures indicate that expansion of sewage treatment capacity at the Jonesboro Plant is limited by small flows in Gastor's Creek, which receives plant effluent.

Human Factors in Sewer Planning

It was noted earlier that some households inside and outside Sanford were using privies where only indoor water closets and connections to sanitary sewers would be acceptable because of the density of development. Where these households are inside the City limits, they are violating a municipal ordinance requiring connections to sanitary sewer. Households in densely populated neighborhoods outside the City limits may not be violating any laws, but they should nevertheless be connected to the municipal sewer system for their own health and the health of the community. Some of these properties can be directly connected to sewer mains in the streets, but in some blocks no sewer mains are available for connection. It is recommended that in the latter cases the City of Sanford and Lee County ensure that sewers are extended to those households without waiting for the usual petition by landowners. Where property owners are too poor to pay the cost of laying sewer, the City and County might work out an arrangement to subsidize sewer installations as they have subsidized water extensions to new industries.

Summary and Recommendations

This discussion of Sanford's sewer situation has touched on the following points:

1. Sanford's future population and industrial growth will apparently exceed the present capacity of sewage treatment facilities within a few years.
2. The existing sewage collection systems are subject to unusually high infiltration of ground water during rainstorms. This results in reduced capacity of the system to handle actual sewage and also increases stream pollution.
3. One pipe in the collection system has reached its capacity at present rates of sewage flow and ground water infiltration. (This is the pipe which connects the entire east side of Sanford to the remainder of the Spring Lane System and is therefore crucial to service in that area.)
4. The topography of the Sanford Planning Area divides it into several drainage basins, each of which would require a separate sewer collection and treatment system if it were to substantially develop. Decisions should be made now on which areas are to be served with municipal sewer and on what terms.

5. Directed sewer extension policy shows promise of guiding future development in patterns and sequences that will reduce public outlays not only for sewers but for other facilities as well.
6. Certain portions of the Planning Area cannot be expected to petition for sewer service even though it is necessary for community health. City and County Authorities will have to take the initiative to ensure sewer installation and connection in these areas.

On the basis of the above conditions, it is recommended that the City of Sanford authorize a comprehensive study of its existing and potential sanitary waste disposal system. Such a study could accomplish the following things:

1. Identify the source of existing and developing disposal problems in the existing sewer system and suggest the most economical solution to them.
2. Provide an accurate picture of the relative costs and feasibility of providing sewer service to the various drainage areas around the City that may be developing and requesting sewer service in the next 25 to 30 years as a guide for sewer extensions policy.
3. Propose a plan for construction and financing of basic sewer facilities (treatment plants and outfalls):
 - a. that is in accordance with the expected residential, industrial and commercial growth of Sanford and
 - b. that will support the achievement of the Land Use Plan.

It is recommended that the City's planning department participate in the sewer study process in order that sewer plants, the Land Use Plan, and plans for other facilities are consistent with each other.

WATER SERVICES

The City of Sanford, as authorized by statute, makes water available for domestic uses, industrial processes and firefighting, inside and outside the City's corporate limits.

General Policies

The City of Sanford uses these powers granted by the N. C. General Statutes with regard to waterworks systems:

1. to acquire rights-of-way, water rights and other property inside and outside the City limits;
2. to build, own, maintain, and operate the water system;
3. to extend the water system beyond the city limits for fire protection or other purposes;
4. to enter into contracts with parties for connection to its water system, and to fix the terms for such connections;
5. to prescribe rates and charges for service;
6. to charge higher rates to property outside the city limits.

Utilities Department

The water supply operations, as well as those of sewage disposal are carried out by the Utilities Department, made up of the Construction and Maintenance Division and the Water and Sewer Plants Division. The Construction and Maintenance Division is staffed by a supervisor and ten employees, the Water and Sewer Plant Division by a supervisor and 13 employees. The Construction and Maintenance Division is concerned with the water and sewage transportation system, while the Water and Sewer Plant Division concerns itself with the operation of the treatment plants.

Nature of Operations

Water is taken from two impounding reservoirs east of the City and also, at times, from the Cape Fear River. The raw water is filtered and treated chemically to bring it up to high standards of purity and taste, then piped to a large underground "clear well", adjacent to the filter plant, from where it is pumped out into the distribution system. Some of the water enters the distribution mains directly from the clear well, but most enters the elevated storage tanks first and from there flows out into the distribution mains as water is drawn.

Staff operations at the water plant include controlling the pumping rate, controlling the chemical treatment, backwashing the filter beds, and checking the quality of the treated water.

The sewer and water construction and maintenance crews lay new water mains, repair breaks, inspect mains, make connections for new users, and inspect and maintain fire hydrants and valves, besides their duties on the sewer lines.

Real Property and Major Equipment

At the present time, Sanford's investment in water facilities includes the following items:

Raw Water Storage Facilities

<u>Unit</u>	<u>Area</u>	<u>Capacity</u>
Lake Williams	20 Acres	65,000,000 gallons
Upper Reservoir	7 Acres	20,000,000 gallons
Lower Reservoir	11 Acres	35,000,000 gallons

Treatment Facilities

- 1 - 3,000,000 gallons per day filtration plant, including coagulation basin, meters, chemical adding devices and filter beds.

Pumps

- 1 - 500 gallon per minute pump between Lake Williams and upper reservoir.
 - 1 - 2,100 gallon per minute pump between Cape Fear River and upper reservoir.
 - 1 - 2,000 GPM
 - 1 - 850 GPM
 - 1 - 700 GPM
- between clear well (treatment plant) and distribution system.

Treated Water Storage

- 1 - 305,000 gallon underground "clear well" adjacent to treatment plant.
- 1 - 500,000 gallon elevated tank at Spruce, Elm, and Woodland Avenues.
- 1 - 250,000 gallon standpipe at Bragg and 11th Streets.
- 1 - 75,000 gallon elevated storage tank at 5th and McIntosh.

Supply Mains

<u>Size</u>	<u>Length</u>	<u>From</u>	<u>To</u>
16"	7 miles	Cape Fear River	Upper Reservoir
8"	2 miles	Lake Williams	Upper Reservoir
12"	10,600 feet	Clear Well	Bragg St. standpipe
8"	10,500 feet	Clear Well	Bragg St. standpipe
8"	15,000 feet	Clear Well	Distribution Lines
16"	17,200 feet	Clear Well	Bragg St. standpipe

Distribution Mains

(from supply mains and elevated storage to hydrants and individual properties.)

<u>Size</u>	<u>Number of Feet</u>
16"	14,000 [†]
12"	9,000 [†]
10"	300 [†]
8"	83,100 [†]
6"	112,300 [†]








Hydrants
262

Meters
4,000

Figure 6 shows the location of the water treatment facility and the major supply and distribution mains of the system.

FIGURE 6

WATER FACILITIES

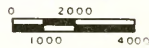
-  TREATMENT AND PUMPING
-  ELEVATED STORAGE
-  12-16 IN. MAINS
-  (PROPOSED)
-  8 IN. MAINS
-  (PROPOSED)
-  EXISTING SERVICE AREA
-  (DEVELOPED LAND WITH 100 OF 4-4" OR LARGER WATER LINE)



SANFORD, N.C.



SCALE



FEET

Water Use Terms

MGD - "million gallons per day", is a measure of the rate of flow.

gcpd- "gallons per capita per day", the total amount of water used for all purposes divided by the population served.

average daily flow - the total amount of water pumped into the system during the year divided by 365.

maximum daily flow - the amount of water used on the day of the year when consumption was highest. This is the "maximum day"; maximum daily flow averages about 1.5 times the average daily flow in most cities.

maximum hourly flow - the rate of flow, in MGD, during the hour of greatest flow, usually on the maximum day. The maximum hourly flow averages 2.5 times the average hourly flow in most cities.

General Characteristics of Water Use

1. Consumption trends

The consumption of water throughout the United States has been increasing faster than the population. The average per capita consumption in the country has been estimated at 140 gallons per day and is expected to rise to 170 gallons per day by 1976, according to "Public Works" magazine. In 1962, the rate of consumption in Sanford was 106 gallons per capita per day.

2. Proportions for Various Purposes

The following table, taken from Water Supply and Waste Water Disposal, by Fair and Geyer, shows how water is used in a typical community:

<u>Class of Consumption</u>	<u>Quantity (gcpd)</u>	
	<u>range</u>	<u>average</u>
Domestic	15-70	35
Commercial & Industrial	10-100	30
Public	5-20	10
Unaccounted for	10-40	25
Total	40-230	100

3. Leakage

The loss of up to 25% of the pumped water at normal pressures is considered normal.

4. Variations in Demand

Water demand is usually greater in the summer than in the winter, for obvious reasons, and there are normal weekly variations as well. Sanford's maximum day in 1963 and the highest on record was Friday, August 9, when the maximum daily flow was 2.86 million gallons.

When adequate elevated storage is available to handle hourly variations of demand, water treatment plants and supply mains are usually designed to supply maximum daily flow, rather than the much larger figure at maximum hourly flow.

Current Water Service in Sanford

1. Service Area

The shaded areas in Figure 6 are those presently (1963) served by Sanford's water mains.

2. Quantity supplies

Figure 7 shows the growth of water consumption since 1948. Although demand has fluctuated, a definite upward trend is obvious. Per capita consumption has increased as well as total consumption.

Future Demands for Service

Projections of Consumption Demand

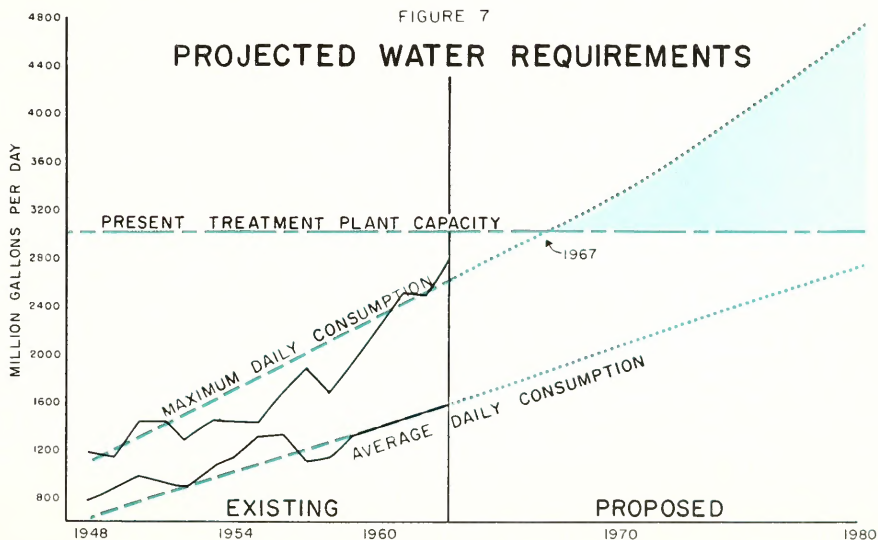
To obtain an idea of how soon the City will likely need to expand its water service facilities, the following projections were made.

In Table 1, the number of people to be served in the years ahead was estimated, based on the projected population growth of the City and a 1970 estimate of the total population that will be served by Sanford's water supply at that time. It was assumed that the additional people served by Sanford water each year after 1960 would equal the number of persons added to Sanford's population after that date.

The total amount of water used per person per day (for all uses) was computed from water works data for the years 1959-1962. (Figures for earlier years were reported to be unreliable.) Although water consumption per person increased an average of about 3 gallons per day in each of those years, a figure of 2 gallons increase per year was used in the forecast to be conservative.

Table 1
PROJECTIONS OF WATER DEMAND

Year	Population Served by Sanford Water	Per Capita Use (gcpd)	Average Daily Use (mgd)	Maximum Daily Use Avg. X 1.7 (mgd)
1960	13,900	99	1.38	2.26
1961	14,100	103	1.46	2.53
1962	14,300	106	1.51	2.58
1963	14,500	108	1.57	2.65
1964	14,800	110	1.63	2.75
1965	15,000	112	1.68	2.84
1966	15,200	114	1.73	2.91
1967	15,400	116	1.78	3.02
1968	15,600	118	1.84	3.13
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1970	16,100	122	1.96	3.33



A multiplier of 1.7 was used to obtain the maximum daily flow figures from the average daily flow figures. This multiplier reflects the actual relationship between the City's average and maximum daily flows. (The national average is 1.5.)

The forecasts are rough but are considered to be on the low side if they are in error. A large expansion of water using industry or an increase in domestic use of water could cause great increases in demand in a short period.

The design capacity of filtration facilities is based on maximum daily flow. If the above forecast is reasonably accurate, Sanford will have to expand its water treatment facility by 1967, if there is to be no shortage of water. The projection is shown graphically in Figure 7 where the projections can be compared with past demands.

Coordinating Water and Sewer Extensions

In the section on sewage services, the value of an informed, planned program of sewer service extension was discussed. It was mentioned that substantial initial costs and operating costs could be saved if (1) the sewer system was extended to some areas rather than others, and if (2) sewer extensions were used to guide development rather than to follow it at whatever cost. A comprehensive Sewer Study is under consideration to provide some of the basic data on the relative costs of servicing. Water distribution is not dependent on gravity flow; therefore, the cost of extensions is closely related to their lengths, but water service has the same kind of development guidance feature as sewer service. The two systems, if extensions are coordinated, can prove a useful tool for inducing growth where the benefits and costs are most suitable to the City as a whole. On the other hand, if the City commits itself to providing water services in outlying areas without regard to the public sewers that will eventually be required, it may find itself or the unhappy residents of the area (whichever pays the bill) paying for a sewer system which requires very high initial and operating costs.

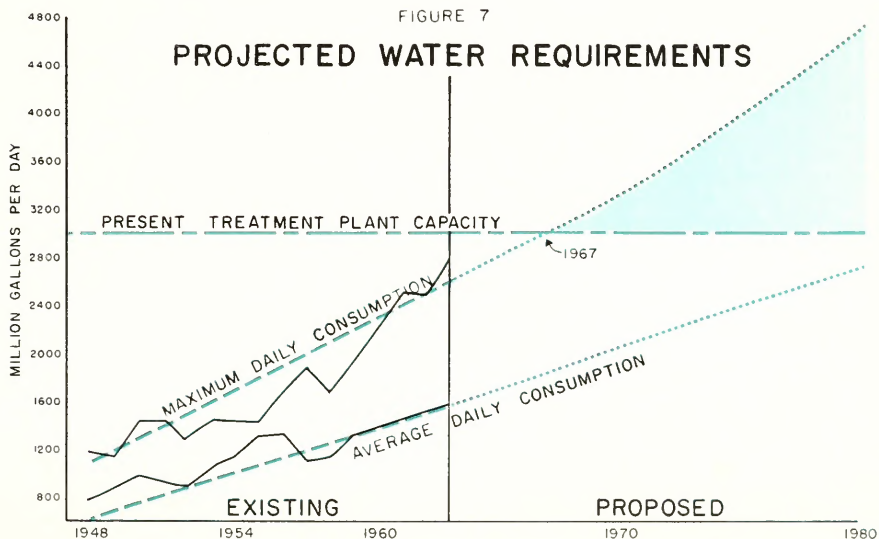
Benefits of Planned Extensions

If extension policies are based on sound plans and a good understanding of both public and private costs and benefits, the following advantages can result:

1. The Land Use Plan, which will be modified by what is learned about sewer and water costs, can be achieved more readily. There will be less tendency for property owners and developers to find fault with the Zoning Ordinance.

Table 1
PROJECTIONS OF WATER DEMAND

Year	Population Served by Sanford Water	Per Capita Use (gcpd)	Average Daily Use (mgd)	Maximum Daily Use Avg. X 1.7 (mgd)
1960	13,900	99	1.38	2.26
1961	14,100	103	1.46	2.53
1962	14,300	106	1.51	2.58
1963	14,500	108	1.57	2.65
1964	14,800	110	1.63	2.75
1965	15,000	112	1.68	2.84
1966	15,200	114	1.73	2.91
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1. The Land Use Plan, which will be modified by what is learned about sewer and water costs, can be achieved more readily. There will be less tendency for property owners and developers to find fault with the Zoning Ordinance.

2. If desired, the annexation of adjacent areas can be speeded up by favoring development closer to the existing City.
3. The cost of serving a given number of new homes and industries can be reduced.
4. If the City chooses to put up the money for major expansions (sewer plants, sewer outfalls, large water mains), it can do so with greater assurance that development will occur in the service area of the facility, and that, therefore, the cost of the facility will be received in assessments and user charges. This in turn will permit designing facilities for longer service and also borrowing when interest rates are at their lowest.

Recommendations

In view of the information brought out in the above discussion, it is recommended that:

1. The City direct its engineering consultants to prepare plans for water treatment and storage facilities which will be adequate for future demands, and
2. The water service extension police, where practical, should be made consistent with the findings of the proposed Comprehensive Sewer Study and with the Subdivision Regulations and the Zoning Ordinance in order to better achieve the basic aim of the Land Use Plan - that of guiding urban growth in the most desirable direction and pattern possible.

3. REFUSE DISPOSAL

- STORM DRAINAGE

FIGURE 1

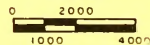
MUNICIPAL FACILITIES

- ① - City Hall
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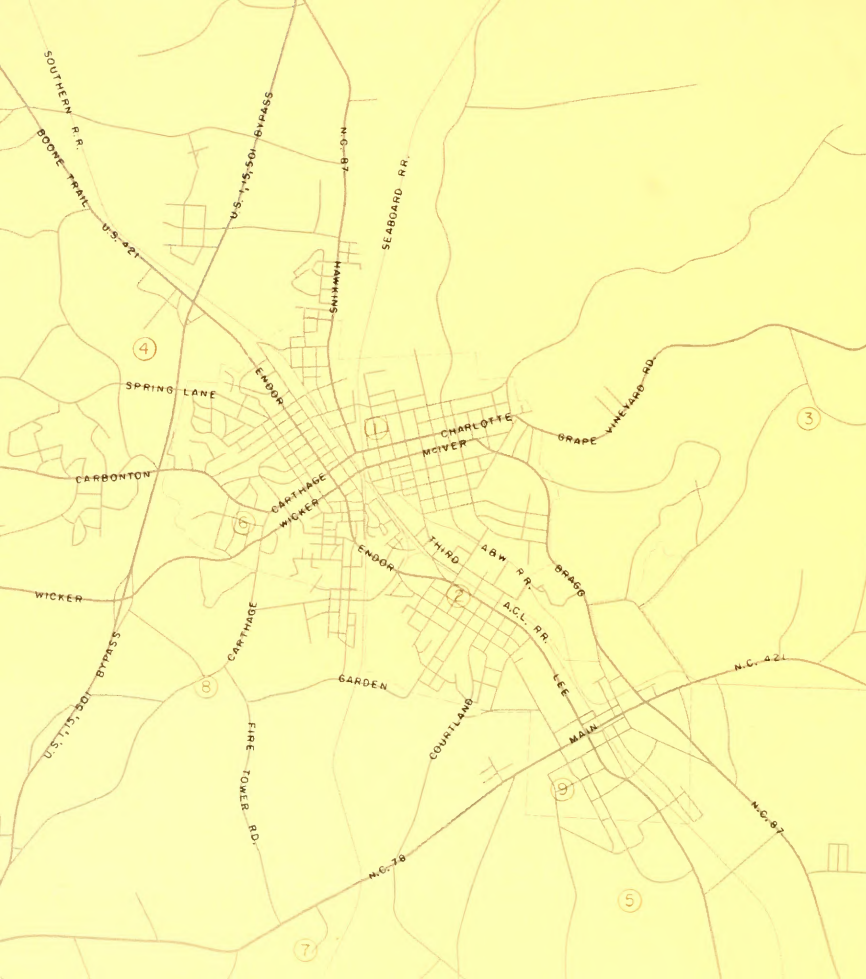
SANFORD, N.C.



SCALE



FEET



REFUSE DISPOSAL

The term "refuse" used in this report is the one recommended by the American Public Works Association. It includes garbage, rubbish, ashes, street refuse, dead animals, abandoned automobiles, and industrial refuse. The importance of the proper disposal of refuse is obvious; an untidy city is no more attractive than an untidy home, and the neglect of garbage and other wastes is a menace to public health.

The City of Sanford has the authority to maintain the clean appearance and sanitary condition of public property. The City also has authority to control and provide for the disposal of private refuse: "The governing body may by ordinance provide for the removal of all garbage, slops, and trash from the city ... and also may require all owners or occupants ... who fail to remove such garbage or trash from their premises to have the garbage, slops, and trash ready and in convenient places and receptacles, and may charge for such removal the actual expense thereof". (G.S. 160-233)

Refuse Regulation

In order to contend with parties with untidy habits and to coordinate the efforts of individual householders and businessmen with the City's refuse collection service, Sanford has enacted ordinances which, on one hand, enumerate illegal practices, and on the other hand, indicate the actions that refuse producers should take in order that their trash be regularly and economically collected.

Collection and Disposal Services

The City provides collection and disposal services to all private homes, institutions, and commercial activities within the city limits, through the Department of Sanitation. Disposing of industrial wastes are the responsibility of the producing industries. Wastes must be properly packaged and located. Special charges are made for extraordinary collection, otherwise the collections are financed out of the general fund. The City also collects and disposes of street sweepings, dead animals, and other refuse that collects on public property.

Volume of Refuse

The current volume of refuse collected in Sanford is estimated at 90 cubic yards or 18 tons of refuse per day, or 5,400 tons per year. This volume, estimated from the capacities of refuse trucks and the number of daily trips to the dump, is similar to the refuse production rate for the nation as a whole; refuse production volumes are closely related to population numbers.

Refuse Disposal Operations

To perform its disposal operations, the Sanitation Department employs 14 persons. It uses 6 pieces of equipment; 2 pick-up trucks, 1 dump truck and 3 refuse trucks of the 15 cubic-yard "packer" type. The vehicles are stored at the City lot opposite City Hall and are maintained at the City shop.

The City has a single disposal site: a 75-acre dumping area 6 miles north of Sanford off Highway 421.

Two three-man crews, working 5.5 days per week, pick up refuse at the curbs of residential property twice weekly. They also service schools and other large institutions every day. Another three-man crew works six nights per week collecting the refuse of each commercial establishment nightly. Other collection operations are made upon request or when necessary.

All the collected refuse is carried to the city's dump; three times per year a bulldozer is hired to push the refuse into heaps for burning. The dump is also used by non-residents of the City and industrial firms on a fee basis.

Commercial Collection Changes

In the near future the City plans to make its commercial collections more efficient by having commercial establishments supply their own special refuse containers which can be wheeled up to a packer truck, attached and dumped into the truck body by one man.

Sanitary Landfill Recommended

The City has been contemplating the replacement of the present dump with a sanitary land fill operation. This move is encouraged by the North Carolina State Board of Health, which condemns dumps as breeding grounds for flies, mosquitoes, cockroaches, and rats and the diseases that they carry.

The sanitary land fill is a special procedure for daily burial of unseparated refuse. Describing the sanitary landfill as "the cheapest satisfactory method of refuse disposal for cities with population under 100,000", the State Board lists these advantages of the landfill method:

1. No breeding places for insects or rodents are created.
2. Fire hazards are eliminated.
3. Smoke and odors do not result from the operation.
4. It is not necessary to separate the types of material. This permits the combined collection of all refuse.
5. The beauty of the landscape is not adversely affected.
6. Adjacent property values are not diminished.
7. Reclamation of useless land is frequently possible to provide sites for playgrounds, parking lots and other purposes.
8. Lack of uniformity in the quantity of refuse disposed of daily does not interfere with efficient operation.
9. Landfill area can be put into operation quickly.
10. Shorter hauls are usually possible.

The details of the sanitary landfill operation may vary to fit the particular site and the equipment used, but essentially the method consists of having the refuse truck dump their loads into trenches dug through a small part of the site. At the end of the working day, a member of a truck crew drives a crawler tractor over the refuse to compact it, then covers it with a layer of earth which in turn is compacted. The covering of earth provides a dog, insect, rat, and odor-proof barrier. The compacting process eliminates the possibility of the ground sinking after rainfall and reduces the amount of land required to handle the refuse.

1. Equipment: The State Board of Health says that for communities of 5,000 population or more "heavy crawler-type tractors", equipped with clam-like devices for scooping up and carrying earth, are usually the best adapted. Experience indicates that for populations up to 15,000 such a unit with a capacity of 1 cubic yard is sufficient. "For populations of 15,000 to 30,000, one unit of 2 cubic yards capacity should be purchased." If consulted, the Sanitary Engineering Division of the State Board will direct local authorities to vendors of suitable rebuilt tractors which cost considerably less than new equipment.

2. Personnel Required: "For small communities, one person can serve in the multiple capacity of truck driver, tractor operator, and foreman. On large installations, a full time foreman should be employed."
3. Land Requirements: Using a formula suggested by the State Board, the land requirements for Sanford's landfill would be about 2 acres per year at the present population. Landfill operations can be shifted to new sites quite easily.
4. Costs: According to the U.S. Public Health Service, operating costs of sanitary landfills range from \$1.00 to \$1.50 per ton of refuse. This would mean a range of \$5,500 to \$8,000 per year. However, there should be a certain amount of savings involved in the landfill operation. Sanford's refuse is now carried 6 miles from town because an open dump is a nuisance and requires large tracts of land. The City pays for this distance in the labor, fuel and other costs spent in covering these miles. It has been estimated that it costs 35¢ per running mile to operate an 18 cubic-yard packer truck between its collection area and the dumping ground (labor included). According to a 1961 survey by the Public Works Department, Sanford's trucks altogether average 36 trips to the dump each week. At this rate, each mile to the dump costs 72 truck miles or \$25.00 per week. This distance can be reduced several miles by using a sanitary landfill.
5. Location Principles: It is claimed that a properly operated sanitary landfill causes no odor beyond 200 feet away. However, it would probably be a good idea to give the method its first trial a greater distance from the nearest residence. Beyond this, several principles apply:
 - a. Minimize the total travel distance for trucks. (This would suggest a site either east or west of Sanford's center.)
 - b. Be sure that soil will compact well.
 - c. Do not block drainage ways.
 - d. Do not locate next to public or private water supply.
 - e. Landowners who want fill may provide sites at no cost to the municipality.
 - f. Prime sites of landfills should be designated and acquired in advance to avoid future hostile public reaction as well as high acquisition costs.
6. Assistance: Representatives of the Sanitary Engineering Division of the State Board of Health offer their services in locating landfill sites and training personnel to operate them at no charge.

Future Outlook

Sanford's refuse output can be expected to grow slightly faster than the town's population, because of the expanding use of packaging materials that is typical in the United States. At the present time, there seems to be no development in the techniques of refuse production or handling that would change the expected size or nature of Sanford's refuse disposal problem.

Using the population target for 1980 of 18,000 persons in Sanford, an estimate of land requirements for refuse disposal by sanitary landfill according to the method suggested by the State Board of Health would be two acres per year or 34 acres over this 17 year period.

STORM DRAINAGE

Carrying off rainwater presents its greatest problems in the built-up areas of cities, where pavements and rooftops prevent the absorption of the water into the soil, while the streets and sidewalks must be kept free of "rivers". In Sanford, as in other cities, underground storm sewers are installed to cope with this problem. The data recording the location, size, and condition of Sanford's storm sewers have not been compiled, but such information is expected to be organized in the near future. These facts, plus a study of current and expected drainage problem areas, will form the basis for improving the storm sewer system and keeping it in step with city growth.

Rainwater not only requires storm sewers and major drainage ways, but must be considered in every land improvement project, public or private. Evidence of this can be seen throughout the community. Builders landscape grounds and grade drive-ways and sidewalks so that water runs into the street and not into the basement or onto neighboring property; roof drains are installed which are connected either to the storm sewer system or into the street. These private methods of getting rid of rainfall leave the disposal of water falling on both private land and public streets in the hands of the City. Ignoring the problem would result in the development of gullies curving up either side of the street and clogging any storm sewers with mud and sand. To prevent this the City has installed curb and gutters in the streets, and linked them with the major drainage system.

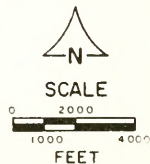
When subdivisions are new and contain only a few homes, the acres of vacant land soaking up the rainfall make storm drainage seem insignificant, but as the remaining lots are sold off and homes constructed, the additional water drainage into the streets becomes a major problem. Eventually curb and gutter must be installed if it was not installed originally, and someone must pay the bill. The fact that:

1. the storm drainage problem is largely created by land development, and
 2. the value of property is increased when it is served by curb and gutter
- provides a basis for requiring that land developers install these improvements at their own expense. (This provision is a common inclusion in Land Subdivision Regulations.)

FIGURE 8
DRAINAGE WAYS



SANFORD, N.C.



In the less densely built-up areas, storm water can be handled adequately by providing ditches and occasional culverts for it and letting it run in its natural courses. The following remarks are contained in the Public Administration Service's book, Municipal Public Works Administration:

"The cost of the storm sewer system will be greatly increased if it must include the construction of large trunk sewers. It may remain at a moderate figure if the existing open streams or water courses can be permanently and satisfactorily maintained. A determination of policy on this point is the most critical one affecting the cost of storm sewers. If the water courses can be acquired by the public, including the lands along the banks to a considerable width, and can be so improved as to have the aspects and attributes of park property, then development will become an aesthetic asset to the city. If this acquisition can take place before the areas are well developed, such lands can be procured at a relatively small cost, and the savings in storm sewer construction will be tremendous. But unless the lands so taken can be improved and policed as high-grade park property, they are likely to be mistreated by the public, become dumps, and eventually develop into a serious health menace."

Sanford has several natural streams that penetrate into the built-up area of the City and form the backbone of the storm drainage system. The major ones are illustrated by Figure 8. One of them, Little Buffalo Creek, which travels through the heart of the City, was described as "excessively polluted," by the State Stream Sanitation Committee in 1956. The 1960 Report on Sewage Treatment Facilities prepared by William F. Freeman, Inc., Engineers, discussed the problem of Little Buffalo Creek. It concluded that the pollution was caused by (1) industrial wastes being dumped in the Creek inside the City Limits, and from (2) septic tank seepage north of the City and (3) service stations and garages discarding oil wastes into the City's storm drainage systems. The Report recommended that the City determine the specific sources of pollution in the Creek and adopt a "storm sewer use ordinance" to prohibit their continuance and prevent pollution of the other natural watercourses in Sanford.

Little Buffalo Creek and the other small streams in Sanford, as suggested above, can offer more than a very inexpensive way to handle storm water. At various points along their course, even within the City, they run through wide, unused areas where the public can gain access to them. These areas offer an opportunity to provide green, attractive open spaces among the City's homes and industries. Such chains of parks could be expected to enhance the value of nearby property. Out where the streams are not yet crowded by homes, advance acquisition of streamside land could include areas large enough to include artificial ponds and qualify as community-wide parks (see the RECREATION portion of this report).

4. AIRPORT

FIGURE 1

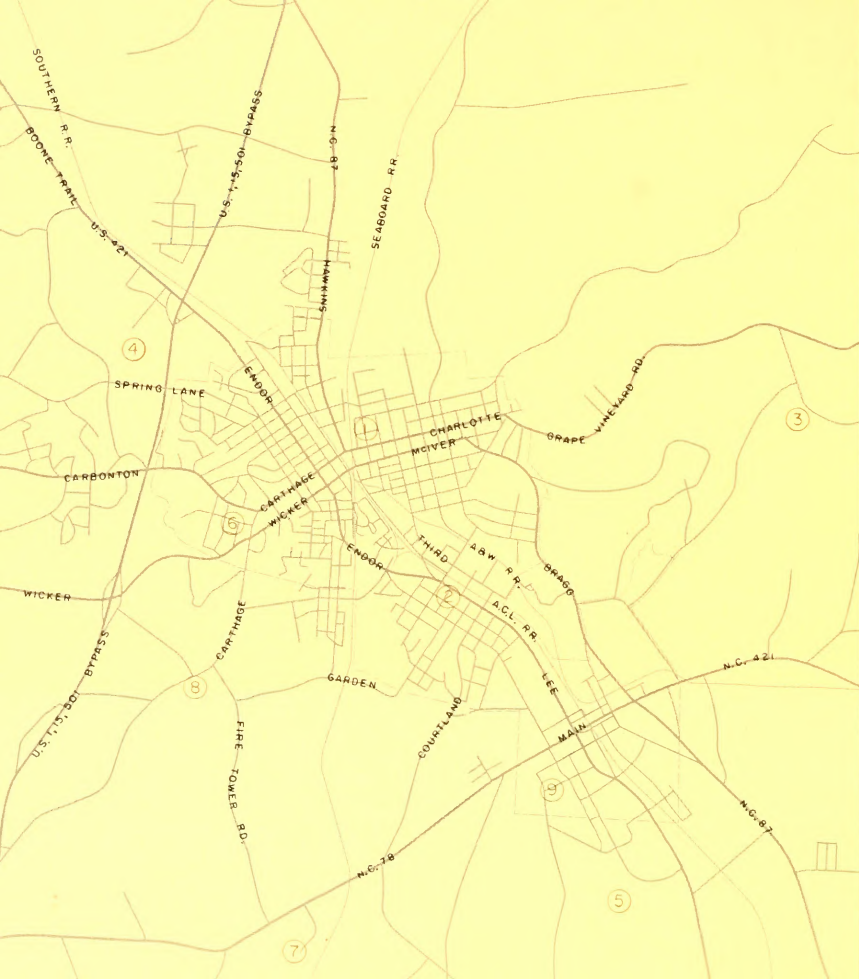
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SANFORD, N.C.



SCALE



MUNICIPAL AIRPORT

The City of Sanford has recently acquired an established landing strip located two miles south of the city. The landing strip is at present being improved according to a plan prepared by John Talbert Associates, Inc., Consulting Engineers, and approved by the Federal Aviation Agency (FAA). Federal funds of \$100,000 which equal a local outlay, have been granted for the purchase and improvement of the airport. The airport will be a "general aviation airport", that is, one which is not served by scheduled airline service.

Improvements and Capacity

When planned improvements are completed, the Sanford Municipal Airport will have a smooth-graded landing strip measuring 3700' x 200', with a paved runway measuring 3500' x 75'. "Clear zones" at the ends of the landing strip, obstacle clearances, wind direction indicators, landing pattern indicators, airport identification markings and other details will be provided to meet FAA minimum standards. According to FAA data, the facility will be capable of handling virtually all models of light aircraft including the heavy executive type now in use. Medium intensity runway lighting and a beacon will make the airport suitable for night use.

Auxiliary facilities will include a paved taxiway and "apron" with tie-down devices. Already in existence are a fuel pump, a small office, a one-plane hanger and a paved access road. The City has purchased 60 acres of land for the airport. This will allow sufficient ground surface and clearances for a future 500 foot extension of the 3600 foot runway now being constructed. The alignment of the runway will provide pilots with wind direction and velocity appropriate for landing or takeoff 95 percent of the time. In the opinion of the FAA representative consulting on Sanford airport, this will make a second "cross-wind" runway unnecessary.

The FAA representative reports that, as far as the airport's capacity to provide for landing, takeoff and taxiing of aircraft is concerned, the present amount of airport property and the planned runway extension should be sufficient for the "foreseeable future." The airport will meet the particular requirements recommended for it in the FAA's "National Airport Plan" which suggests the essential requirements for each airport in the United States for the next seven years.

Operating the Airport

1. Authority and Responsibility

Sanford's authority with respect to airports is found in the N. C. General Statutes. North Carolina municipalities are empowered to own, improve, maintain, operate and regulate airports outside or inside their corporate limits. Tax and utility revenues can be used for airport support, and land can be acquired by the use of eminent domain. Municipalities can delegate municipal authority to agencies of their own choosing and can adopt and enforce "airport zoning regulations" to protect landing approaches to the airport from obstruction. Municipal officers share the responsibility of enforcing the rules and regulations of the Civil Aeronautics Administration (now the FAA) with regard to the safe operation of aircraft.

The Sanford Board of Aldermen has assigned its powers and duties regarding the municipal airport to the eight-man Sanford Airport Commission. The question of how the airport will be administered had not been decided at the time of this writing.

2. Financial Matters

Small airports may, in some cases, earn revenues sufficient to cover operating and maintenance expenses, but seldom do they earn enough to cover land acquisition, construction, and related debt service costs. But airports are considered useful to communities whether or not they pay for themselves through charges to users. In this they are similar to streets, highways, sidewalks, schools and parks, which are beneficial to persons whether they personally use them or not.

To the large majority of taxpayers who do not use the airport for business or pleasure, the financial benefits of a local airport are presumed to come indirectly: to the industrial employee and his family, from the expansion or continuance of employment opportunities offered by firms that may prefer locating plants where company planes can land; and to local merchants, property owners, and other parties selling their services in the local market, from the expansion or maintenance of a population of industrial employees and their incomes.

However, insofar as special benefits to users of the airport can be identified and charged for, there is no reason why this should not be done. The FAA publication, "Small Airports" suggests as revenue producers: the sale of aviation gasoline and oil, tie-down fees, rental of hangers and office space, operation contracts, concessions, and the short-term leasing of excess airport land for agricultural purposes. Airports can add to the non-monetary benefits they provide through providing facilities such as picnic areas where families can come and add the excitement of watching the airplanes to their recreation.

Use of the Airport

The Sanford Airport will be a "general aviation" airport, which means that it will not be used for scheduled airline service. It is designed to handle light (one-and-two engine, propeller driven) aircraft and will have no equipment for "blind" landings and take offs. The activities that may be found at general aviation airports are classified into four categories by the FAA:

Commercial: Air taxi service; charter service; small freight deliveries; agricultural services; and aerial photography.

Business: The use of personal or company aircraft for business trips.

Instruction: Flying lessons.

Personal: Recreation or occasional business flying by plane owners.

Sanford's complement of based aircraft has grown from three in 1961, when the landing strip was first established, to thirteen in 1963. This in spite of the fact that the unpaved runway often diverts traffic from Sanford in wet weather. Of the thirteen aircraft presently based in Sanford, three are company-owned business planes, one is for commercial use and nine are used for personal flying.

The airport is used intensively for personal flying whenever flying weather is good. The three planes owned by local firms are used regularly. The airport receives its heaviest business traffic during late summer when tobacco dealers come to Sanford, but some local branches of larger firms are visited by business aircraft throughout the year.

The current improvements to the airport, especially the paving of the runway, are expected to increase the traffic at the airport, especially traffic which was previously detoured in wet weather. The FAA representative assigned to Sanford estimates that six based aircraft will be added to Sanford's present number by 1967.

Airport Planning

Planning for airports is of two types: planning the development of the airport itself, and fitting the airport into the over-all plan for the community.

The first type of planning involves the creation of an Airport Master Plan.* The airport Master Plan concerns itself with the internal, physical elements of a single airport. It is the designer's idea of how the airport will expand to its ultimate development. The basic element in this plan is the "Master Plan Layout", which shows "all existing and proposed facilities or structures, property lines, topography, utilities, approved departure surfaces, and clear zones in addition to the ultimate runway and taxiway layout." Sanford has already begun airport planning of this type; this topic will be discussed later.

The second type of planning, that of determining and establishing the best relationship between the airport and the remainder of the community, is best done before any airport has been located but is a valuable procedure even if the airport has already been established, as is true in Sanford. This type of planning has been called "comprehensive planning for airports," and is deliberately integrated with the planning process for the community as a whole.

Planning The Airport

It was mentioned earlier that Sanford has already started on Airport Master Planning, that is, planning for the airport itself. This "start" is the "Airport Master Plan" mentioned earlier, which was drawn-up by the airport designers as a blueprint for both the current improvements to the airport and future developments of a basic nature (such as the ultimate extension of the paved runway).

Sanford's Master Airport Plan is not intended as an unchangeable specification of the optimum development of the airport, nor as a weakly-based notion that must be thrown out with the first unexpected event. It is a basic guide to development that provides room for unspecified expansion; it should be kept up-to-date by periodic study and revision in the light of new developments. Both the FAA and the airport designer should be brought in when the Airport Commission feels that developments might require a modification of the original plan.

* FAA, Minimum Requirements for VFR Airports.

Comprehensive Planning

Comprehensive Planning for Airports will provide data for decisions in the following matters:

1. Choosing the most appropriate uses of the land which is, or will be, directly affected by the presence of the airport. By land "directly affected" is meant land the usefulness of which could be adversely affected by aircraft noise or the risk of crash, for example, or beneficially affected by being conveniently close to the airport. The choice of land uses in the vicinity of the airport must also include the control of the growth or construction of hazards to air navigation. The decisions regarding these matters will be reflected in the Land Use Plan and in Zoning Ordinances.
2. Making the appropriate modifications of the road system to encourage and provide for the types of land use planned for in the airport's influence area. These modifications (if any) should appear in the Thoroughfare Plan.
3. Making the appropriate modifications of the plans or policies for extension of sewer and water lines, not only to serve the airport itself but to guide and provide for the kind of urban development expected or designated for various parts of the airport's influence area.
4. The courses of action mentioned above which affect outlays of municipal capital will of course have an affect on the Public Improvements Program and the Capital Budget.

Zoning

For implementing the decisions about the best use of land affected by the airport, two types of zoning are available:

Airport Zoning: this type of zoning is chiefly to prevent the establishment of hazards to air navigation such as tall buildings, trees, smokestacks, burning dumps, or power lines. North Carolina cities have legislative permission to apply this type of zoning outside their conventional zoning jurisdiction and the FAA strongly recommends this action.

Conventional Zoning: It is desirable not only to protect aircraft from hazardous land uses, but also to protect people and property from aircraft noise and crash risks. It is also desirable to make the most of any benefits of airport accessibility that exist. In the interest of safety, conventional zoning can prevent the concentration of population in airport approach areas. In the interest of protecting human peace of mind, protecting property values and maintaining good public relations, conventional zoning can prevent the establishment of churches, schools, residential developments

and similar land uses where these uses will be harassed by noise created by increases in aircraft activity or new developments in aircraft propulsion that were not anticipated when the land was developed.

In the interest of promoting the community welfare, conventional zoning can reserve certain lands for productive private activities that not only are unaffected by aircraft noise but prefer a location near to the airport.

Because Sanford's conventional zoning jurisdiction does not extend far enough to include the airport, adequate zoning coverage for land around the airport will require the establishment of County zoning. If for some reason, the Board of County Commissioners do not wish to zone the entire county, they may exercise their authority to zone parts of it.

Recommendations

It is recommended that the City of Sanford:

1. authorize the performance of studies and planning operations which will fit the airport into the total community planning process.
2. authorize the establishment of airport zoning regulations in the Zoning Ordinance.
3. ask the Lee County Board of Commissioners to cooperate in the development and enactment of a County Zoning Ordinance for that portion of Lee County that is beyond Sanford's zoning jurisdiction but which will be affected by the Sanford Airport.

It is recommended that the Sanford Airport Commission:

1. discuss with the Sanford Parks and Recreation Commission the possibility of utilizing airport property for nonflying recreation purposes.
2. utilize to the fullest extent the technical assistance available from the personnel of the FAA District Airport Engineer's Office in Charlotte, especially when airport plan changes are contemplated. The office can provide background material or advice on airport planning, design, construction, management, operation, and maintenance.
3. establish a library of the inexpensive (if not free) publications of the FAA concerning general aviation airports, and make arrangements for keeping it up-to-date. The library should include the latest versions of Part 151 of the Federal Aviation Regulations - Federal Aid to Airports (31 pages) which defines eligible projects for Federal financial grants; and the National Airport Plan with its annual supplements, which make specific reference to the Sanford Airport.

5. RECREATION

RECREATION

Introduction

In 1945, the following passage was entered into the General Statutes of North Carolina:

"...the public policy of this State is declared to be as follows: The lack of adequate recreational programs and facilities is a menace to the morals, happiness and welfare of the people of this State in times of peace as well as in time of war. Making available recreational opportunities for citizens of all ages is a subject of general interest and concern, and a function of requiring appropriate action by the governing bodies of the several political and educational subdivisions of the State. The legislature, therefore, declares that in its considered judgment the public good and the general welfare of the citizens of this State require an adequate recreation program and that the creation, establishment and operation of a recreation system is a governmental function..."

The passage was part of the Recreation Enabling Act. It went on to name the powers that were conferred on units of local government:

1. "To establish and conduct a system of supervised recreation."
2. "To set apart for use as parks or playgrounds, recreation centers or facilities, any lands or buildings owned by or leased to such a unit and may improve and equip such lands or buildings."
3. "To acquire lands or buildings by gifts, purchase, lease or loan, or by condemnation as provided by chapter forty, Eminent Domain, of the General Statutes."
4. "To accept any gift or bequest of money or other personal property or any donation to be applied, principal on income, for recreational use."
5. "To provide, construct, equip, operate and maintain parks, playgrounds, recreation centers and recreation facilities, and all buildings and structures necessary or useful in connection therewith."
6. "To appropriate funds for the purpose of carrying out the provisions of this article."

(Note: The North Carolina Supreme Court has ruled that ad valorem (property) tax receipts cannot be spent for recreation purposes without a favorable vote of the local citizens on this issue.)

If a majority of citizens voted in favor of this, the local government unit would be empowered to:

1. "To provide, establish, maintain and conduct a supervised recreation system for the unit."
2. "To levy an annual tax of not less than three cents (3c) nor more than ten cents (10c) on each one hundred dollars of assessed valuation of the taxable property within such unit for providing, conducting and maintaining a supervised recreation system."
3. "To issue bonds of the unit in an amount specified therein and levy a tax for the payment thereof, for the purpose of acquiring, improving and equipping lands or buildings or both for parks, playgrounds, recreation centers and other recreational facilities."

The legislature allowed that, if the local community wished to take on the recreation authority offered by the enabling act, it could exercise its authority through either a department of the municipal government or through a commission of five members or more appointed by the local governing body. The legislature revealed its recognition of the instrumental role of recreation in personal welfare and development by suggesting that, if a recreation commission were established, it might include representatives of the local schools systems, health department, and welfare department.

Origin of Sanford's Public Recreation

Sanford readily accepted the idea that the municipal corporation was an appropriate instrument to achieve the goals of recreation that could not be met by other means. In fact, the City had been operating the swimming pool and Temple Ballpark since the 1930's. The Sanford Parks and Recreation Commission and the office of the Director of Recreation were established by the Board of Aldermen in March of 1946, and in June 1947, a recreation tax was voted into existence by the people to provide an operation budget for the Recreation Department of \$10,000.

Current Arrangements

The Sanford Parks and Recreation Commission is still the policy-making body for public recreation in the City. The administration of recreation policy is the responsibility of the Parks and Recreation Department, which at present consists of the Recreation Director and two maintenance men. The Director has the authority to hire persons for summer and part-time work.

The 1962-63 fiscal year operating budget for the Parks and Recreation Department was as follows:

Sources of Funds

General Fund	
Recreation Fund (special tax*)	22,600
Back Taxes	1,526
Intangible Tax	968
Charges and Fees	7,821
Parking Meters	3,879
Contributions and Gifts	1,339
Lee County **	2,000
Total	40,113

* For 1963-64 the special recreation tax was raised from 8c to 10c per \$100 property valuation, increasing the Recreation Fund to \$32,240.

** Lee County raised its voluntary contribution to the Recreation Department by \$1,000 for 1963-64.

Disposition of Funds

Percentage of recreation budget spent for:	
Recreation	63%
Parks	24%
Special Facilities	13%
Capital Improvements	--
Total	100%
Leadership	14%
<u>Cost per capita</u>	<u>\$3.25</u>

Sanford's Early Recreation Planning

In 1950 the Sanford Recreation Commission sponsored the City's first recreation study and plan, on the advice of Mr. Harold D. Meyer, at that time Director of the North Carolina Recreation Commission. The resulting report was written by Charles M. Graves and was entitled Master Plan for Recreation, City of Sanford, N. C. This Plan touched on every aspect of Sanford's recreation needs and resources as they stood in 1950. Some idea of the scope and detail of the Plan can be gained by the following outline of topics covered:

(1) The Relation of Community Sociological Factors & Recreation; (2) City Government; (3) Population; (4) Industries; (5) Juvenile Delinquency; (6) Physical Barriers & Traffic Accidents; (7) Sanford Recreation Program; (8) Board of Education; (9) Churches; (10) Private Recreation Agencies; (11) Armory; (12) Commercial Recreation; (13) The Importance of Planning; (14) Existing Areas & Recommended Developments to Meet Recreational Area Facility Needs; (15) Recommendations on Administration & Policy; (16) The City Schools & the Recreation Program; (17) Recommendations on Program; (18) Recommendations on Personnel; (19) Recommendations on Volunteer Leadership; (20) Recommendations on Public Relations; (21) Recommendations on Finance Recreation Budget; and (22) Priority Schedule.

The Plan was instrumental in the realization of Dalrymple Park, Washington Park, and in the provision of picnic facilities at the Park Avenue Park, among others. Several of the major recommendations of the Master Plan have not been realized. This may have been due to reconsideration, but may as well have been the result of ignorance of the existence of the proposals; the Plan was lost at some point in the turnover of officials and has only recently been rediscovered.

The Plan is Not Up-to-date

Had the "Master Plan for Recreation" been revealed to the succession of persons who took office since its publication, it could have not only served the purposes set out for it, but it could have been kept up-to-date by periodic studies of the factors which formed the basis of the original Plan. As things stand, the original data on population distribution, school locations, and other important aspects of the City are now 14 years old, a 14 years during which Sanford has changed considerably: population has increased, development has extended in new directions, the corporate limits of the City have been enlarged, and four new schools have been built, each changing the type and location of recreation facilities and programs that are most appropriate for the community.

Despite the obsolescence of a great deal of the data upon which the specific projects and programs of the Plan were based, the policies and principles set forth in the Plan are still valid today. The Plan is the logical starting point in the formulation of further plans for Sanford's recreation activities and facilities.

Comprehensive Recreation Plans Have Many Uses

Sanford's Recreation Plan contained the reasons for its development; according to Mr. Graves, a Master or "Comprehensive" Plan is: (1) a guide to the orderly development of existing areas; (2) a guide to the selection and development of new areas and facilities to meet existing and future needs; (3) a guide for a comprehensive program to serve all age groups, all hours of the day, all seasons of the year -- indoor and outdoor; (4) a guide to assure the maximum functional use of each recreational area and facility; (5) a practical plan for immediate and long-range action with respect to program, areas, facilities, and finances;

And a Master Plan is needed for the following reasons: (6) to assure maximum benefit for each dollar spent for administration, personnel, program activities, and construction; (7) to avoid unrelated planning by unqualified groups; (8) to acquire the people with the program and the need for additional services, areas, and facilities; (9) to avoid duplication and overlapping of services, areas, and facilities; (10) to facilitate the preparation of construction plans and assure their adequacy; (11) to expedite action on construction when labor, materials, and funds are available; (12) to make certain that each development is a component part of an over-all, integrated plan; (13) to serve as a guide for zoning appropriate sites for parks, parkways, and recreation areas; (14) to promote an effective program for better health, better learning, better training, and better living for happier citizens; and (15) to encourage sponsorship of certain recommended developments by industry, civic clubs, and interested individuals.

Evident Problems and Possibilities

A map of Sanford's current recreation facilities is shown in Figure 9 and a list of the acreages of recreation spaces is in Table 2.

The full range of recreation needs and resources facing Sanford can best be brought to light by the plan preparation process. But there are already evident to recreation policy-makers, workers and other interested parties, several problems and opportunities which warrant attention. Some of these are listed below.

FIGURE 9

RECREATION FACILITIES

PARK & PLAYGROUNDS

- ① Sanford Golf Course
- ② Third Street
- ③ Standpipe
- ④ Temple
- ⑤ Seventh Street
- ⑥ Park Avenue
- ⑦ McIver
- ⑧ Washington
- ⑨ Balrhyple
- ⑩ County
- ⑪ Proposed

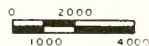
SCHOOLS

- ⑫ Bragg Street
- ⑬ McIver Street
- ⑭ Williams
- ⑮ Sanford Jr. High
- ⑯ St. Clair
- ⑰ Wicker
- ⑱ Knight
- ⑲ Jonesboro Heights
- ⑳ Sanford Central High
- ㉑ Industrial Ed. Center
- ㉒ Proposed
- ㉓ National Guard School

SANFORD, N.C.



SCALE



FEET

Understaffing in Recreation Department

There is evidence that the Recreation Department needs more personnel, for both clerical and supervisory work. When the Director's time is taken up with necessary but routine matters such as record-keeping, equipment supply, established program supervision and maintenance supervision, he cannot give adequate attention to exploring the needs of unserved but less vocal groups, developing programs for new or previously unmet needs, or looking ahead to future problems and opportunities.

The Recreation Director must have a central role in the development of a Recreation Plan. Once the plan is established, the Recreation Director is expected to be the main source of efforts, not only to bring the ideas of the plan into reality, but to keep the plan in step with the changing conditions of the growing community.

Teenagers' Needs Are Not Being Met

It is reported that many people of high school age and over are not provided with after school and after work recreation facilities that suit their taste, and that some sort of indoor youth center might be the answer.

Certain Parts of the City Clearly Lack Recreation

1. Most of the 1,600 persons in the neighborhood around the Floyd L. Knight School, including over 200 children in the 6-12 age group, live over one-half mile from the nearest recreation facility and summer program at Dalrymple Park.
2. West Sanford lacks a park for softball, little league baseball, football and picnicking.
3. East Sanford needs space and improvements to provide tennis courts and an adjoining shelter.

Certain Existing Facilities Need Improvements

1. Park Avenue Park: The bathhouse should be replaced by a modern, adequate structure. The tennis courts should be fenced with chain-link fence, and the courts themselves resurfaced with regulation clay. Hard-surfaced off-street parking space is needed to reduce the danger of injury to children dashing across the streets from between parked cars.
2. Temple Park: The baseball stands are in poor condition and the toilet facilities inadequate.
3. Dalrymple Park: The tennis courts should be surfaced with asphalt, fenced with chain-link fence, and provided with a drinking fountain and an adjacent shelter.

Table 2: RECREATION FACILITIES

	Total Acreage	Acreage Used For Non- Recreation Purposes	Acreage Prepared For Recreation Use	Remain- ing Acreage*
<u>Parks and Playgrounds</u>				
1. Sanford Golf Course	116	0	116	--
2. Third Street	2	0	2	--
3. Standpipe	$\frac{1}{2}$	0	$\frac{1}{2}$	--
4. Temple	6	0	5	1
5. Seventh Street	2	0	2	--
6. Park Avenue	6	0	6	--
7. McIver	2	0	2	--
8. Washington	27	0	10	17
9. Dalrymple	7	0	7	--
10. County	4	0	4	--
11. Proposed				
<u>School Sites (City and County)</u>				
12. Bragg Street (Grades 1-6)	18	1	1	16
13. McIver (Grades 1-6)	3	1	2	--
14. Williams (1-6)	17	1	1	15
15. Sanford Jr. High (7-9)	3	1	2	--
16. St. Clair (1-6)	6	2	4	--
17. Wicker (1-12)	20	10	5	5
18. Knight (1-6)	14	1	1	12
19. Jonesboro Heights (1-9)	6	3	3	--
20. Sanford Central High (9-12)	75	24	25	26
21. Industrial Education Center	28	6	--	20
22. Proposed (1-6)	15	5	5	5
<u>Other Areas</u>				
23. National Guard Armory	--	--	--	--

* Possibly available for additional recreational development.

Financing Is At A Crossroads

At the request of the Recreation Department and the City Manager, the Sanford Board of Aldermen raised the special recreation tax rate from the previous 8¢ per \$100 property valuation to the statutory limit of 10¢ per \$100. This was done for the fiscal year 1963-64.

Unless the statutory limit on the recreation tax is raised, any substantial increases in revenue will have to come from other sources. If general property tax revenues other than the special recreation tax are to be used for either operating expenses or debt service, a majority vote of Sanford's citizens will be necessary.

Improvement Opportunities Are Available

Private Donations - Private interests have offered to donate land for the recreational use of the community; the acceptance of these lands is under consideration. Since an acceptance of land by the public implies some expenditures for improvement, maintenance and, in some cases, program operation and the cessation of taxes, any property offer must be reviewed with care to insure that it is the most productive site in that particular neighborhood. Where a recreation plan is in existence, the plan reveals the areas where space is needed; provides landowners with a guide for productive land donations and provides recreation officials with a guide for judging the usefulness of particular offers of land.

Civic Group Interest - Some Sanford civic groups have shown a recognition of the city's need for recreation programs and facilities and a willingness to fill these needs by voluntary contributions of money and time. As it does in the case of land donors, the Plan can reveal to interested groups well-documented areas of need in terms of programs and facilities and thus provide definite targets which the contributing group can be sure are valuable.

Low Income Housing - Two low-rent housing projects have been planned for Sanford and more are on the way. These projects were planned and will be built, owned and operated by the Sanford Housing Authority, with financial assistance provided through the Federal government. One of the requirements for Federal assistance in such projects is that provisions are made for indoor and outdoor recreation space. The recreation space may be located off the project property to serve non-residents of the project if it continues to serve project residents as well. This flexibility in the low-rent housing program provides an opportunity to pool the resources and coordinate the efforts of the Sanford Housing Authority, the Recreation Department and other parties interested in recreation services. A conference of City, Recreation Department, and Sanford Housing Authority and Federal Officials brought out the possibility of:

1. placing the housing project's recreation building on the project property so as to provide convenient indoor playspace and toilet facilities adjacent to a playground provided by the City, and
2. the City and the Housing Authority jointly constructing a larger building for use as a neighborhood recreation center which could be either on or off the Project property.

Joint School-Recreation Facilities - In his 1950 "Master Plan for Recreation", Mr. Graves recommended that educational and recreational programs "be well coordinated throughout the City." The close relationship between education and recreation has been recognized for many years. (In Milwaukee, Wisconsin, the idea is carried so far as to have the city recreation program administered by the Board of Education.) In the field of city planning, the idea of a "neighborhood" with an elementary school, park and playground complex as its center, and with groups of these neighborhoods centered on a junior or senior high school with adjoining park and athletic fields forming a "community", has been a strong force in shaping the physical plans of cities of all sizes.

Part of the reason for both the developments just mentioned is the very practical notion that it is a waste of resources for a single community to finance approximately twice as many physical facilities as are necessary to do a given set of jobs. Schools and their grounds are, or can be, designed to provide just the right kinds and amounts of after-school or summer play or athletic space, indoor and outdoors, for the children who attend them. Schools should be located the way playgrounds and parks should be located: so children do not have to walk very far or cross dangerous streets or railroads to reach them. Also they are unused for school purposes at exactly those times when the children are free to play and when adults are not working.

Of course schools can offer more than playgrounds for children: their classrooms, auditoriums, gymnasiums, and athletic fields are in many cases "adult size." Both city and school can benefit where school grounds are expanded by addition of attractive park lands, which expand the recreation space of the school and provide a "buffer" for the surrounding neighborhood, besides making the site an all-around outdoor recreation center for the whole family.

The creation of such multi-purpose centers require cooperative effort by both school and city in both the planning and administration stages. In the design of buildings, especially, forethought can maximize their recreational usefulness and minimize the problems of protecting school property. And, of course, there must be agreement on the responsibilities of parties and the financial terms of use, among others. However, many devices designed to handle the property responsibility problem in particular indicate that "where there's a will there's a way."

Recreational use of school facilities is not new to Sanford, where some school grounds and portions of buildings are used for summer programs conducted by the Recreation Department, and certain of the gymnasiums are also made available for winter basketball programs. In some schools, Boy Scout troops hold evening meetings.

An informal survey of Lee County and Sanford school administration revealed a very favorable attitude toward more intensive use of school property during non-school hours, as long as the using agencies were prepared to pay the extra costs involved in operating the plant and meet reasonable requirements for supervision.

Some of the school sites in Sanford have areas which are not currently in use for either recreation or other purposes. These school sites are listed in Table #2. Some of these schools might benefit from having more of their sites developed for recreational use. If there is also a shortage of after-school and summer vacation space in these neighborhoods, school officials and recreation officials might find satisfactory terms for the joint development and use of school property.

Natural Water Courses - In the section of this report on storm sewers, the value of retaining and preserving natural water courses as the cheapest way to handle storm water is discussed. A quote from Municipal Public Works Administration is repeated here:

"If the water courses can be acquired by the public, including the lands along the banks to a considerable width, and can be so improved as to have the aspects and attributes of park property, then development will become an aesthetic asset to the city. If this acquisition can take place before the areas are well developed, such lands can be procured at a relatively small cost, and the savings in storm sewer construction will be tremendous. But unless the lands so taken can be improved and policed as high-grade park property, they are likely to be mistreated by the public, become dumps, and eventually develop into a serious health menace."

Sanford's system of natural water courses is shown in Figure 8. There are already some examples in Sanford of the utilization, for recreation and beauty purposes, of natural water courses: at McIver Park (behind Lee County Hospital), at St. Clair School, and at the Park Avenue Park. There are many other places along these water courses where the land is undeveloped and would provide an opportunity to convert it into park. Where substantial land is available, the City could do what some private property owners have done: dam the streams to form ponds. Such ponds would add to the beauty and usefulness of the parks system.

Financial Assistance Available for Open Space Acquisition

A look at an aerial photograph of Sanford will reveal that many of its residents can still enjoy the pleasure of being able to look out their windows into wooded, undeveloped tracts or the open fields of farms. And if Sanford citizens are like their fellow North Carolinians, they are known for their love of this "breathing space." But a visit to Raleigh or Durham reveals that many North Carolinians have lost this luxury and could replace it only at tremendous cost.

Sanford is growing at a steady rate: residential subdivisions are gradually filling up the open spaces and land prices are rising. Before any more open lands vanish, it might be wise for the citizens of Sanford to decide which undeveloped spaces are worth saving, then co-operate to save them.

At the present time the only reliable way to preserve a particular piece of land in open-space use is to purchase it, or just purchase the development rights (which are usually cheaper). (In the case of farmland, for example, a city could purchase the farmer's rights to have buildings placed on his property, but he could continue to use the land to grow crops.)

In order to help cities conserve precious open space, whether for recreation, conservation or scenic use, or to channel development into more orderly patterns, the federal government offers them financial assistance. Cities may receive grants to cover up to 30% of the acquisition cost of land designated to be used as permanent open space.

Free Technical Assistance Available: The North Carolina Recreation Commission, was created in part to provide expert advice on recreation organization, staffing, financing and planning procedure to local organizations, public and private. The Commission can recommend recreation planning consultants as well as help Sanford recreation planners with the above matters.

Recreation Recommendations

It is recommended that:

1. comprehensive recreation planning be resumed in Sanford, sponsored by the Sanford Recreation Commission;
2. recreation planning experts be employed in preparing an updated plan;
3. the recreation planning process be carried out, both in its initial and subsequent stages, in consultation with all government agencies and private groups who have an interest at stake and/or a contribution to make. The public "consultants" might include representatives of: the City of Sanford, the Board of County Commissioners, the Sanford Planning Board, the two Boards of Education, the Sanford Housing Authority, and the N. C. Recreation Commission; and
4. special attention be given to school-city cooperation in planning and utilizing school and city property for school and non-school recreation.

An outstanding example of successful school-city cooperation was reported in "The American City" magazine for August, 1959. The article is reprinted here to demonstrate one possible form of machinery for school-city cooperation.

COOPERATIVE CITY-SCHOOL PLANNING PAYS OFF

Ft. Lauderdale, Florida Uses A Single Site For Both School And
Public Recreation Facilities And Saves \$105,000.

"Cooperative city-school planning for the mutual benefit of both agencies can pay dividends. This fact has been proved in Fort Lauderdale by almost a year of trial at the Lauderdale Manors neighborhood playground.

The idea was conceived late in 1954 by the Parks and Recreation Department when we began looking around in a new subdivision for a suitable playground site. None was available. At the same time a survey of the school sites in the county revealed that not a single elementary school had adequate recess or playground facilities. A 10-acre area in the subdivision had been set aside for an elementary school. We immediately contacted the school board and suggested the idea of cooperative planning.

Previously, as in many communities throughout the country, school and park and playground areas had been purchased, developed, and operated separately with little or no consideration given to duplication of equipment. The 35-hour work week and the growing percentage of older people in our society, particularly in Florida, has been creating a great need for a diversified recreation program. We pointed out to the school authorities and the Ft. Lauderdale City Commission that since the largest single expenditure of the local tax dollar goes into schools, more use of school buildings for non-school purposes would bring a better return on the investment.

Our suggestion received a positive reaction from both the school board and the city commission. We proceeded to organize a "City-School Coordinating Recreation Committee" to combine the initial planning of schools, city parks and playgrounds for the use of both city and school groups.

The Committee included the mayor, city manager, director of recreation and parks, the chairman of the parks and recreation advisory board and the chairman of the planning and zoning board as representatives of the city. The schools were represented by the superintendent of schools, the school planner and the chairman of the school board.

The Committee met informally to plan the pilot project at Lauderdale Manors with the following objectives and principles in mind:

1. A desire to relate the development of recreation areas to existing school facilities, density of population and direction of growth of the city.
2. A realization that a school and a playground are generally required in every residential neighborhood and the location of a playground on an elementary or a junior high school site is beneficial if schools are centrally located and possess sufficient play area. Thus, planning for dual use of sites is an advantage to both the school and city. Also, daily and yearly differences between school and adult schedules will prevent recreation areas from falling idle.
3. A recognition that the school of tomorrow should be constructed so units for recreation activities - auditoriums, gymnasiums, band and orchestra rooms, shops for crafts and woodworking, etc. - will be located away from parts of the building devoted primarily to instructional purposes.

With these principles in mind, the Committee performs the following functions:

1. It prepares a specific plan of development for each prospective school-recreation area and defines for "school" and "city" areas so school buildings and play areas are separate. The dividing lines are on paper only.

2. Reviews the preliminary plans of new school structures and their location, and makes comments and suggestions with a view to possible future use of the plan for neighborhood and community purposes.
3. Where city parks or playgrounds join school land, it recommends design features in the playground areas that will make it adaptable to both city and school use. Both Warfield Park and South Side Park fall within this category.
4. It coordinates plans for the acquisition of park or playground areas with plans for the acquisition of school areas.
5. In places where the city deems a neighborhood recreation area desirable on school-owned land, it arranges a contractual agreement for a school-to-city lease of part of the land for mutual development.

Since these plans were completed 2½ years ago, an excellent working relationship has grown between the city and school boards. Lauderdale Manors is the result. The Parks and Recreation Department utilizes the school sites and buildings without charge, and the schools use the city's swimming pool, ball fields and tennis courts without charge (except for special services).

Besides Lauderdale Manors, four other contractual agreements have been arranged for combined use of sites. Specifically, these agreements permit the school board to lease a portion of its land (generally five to six acres) to the city for one dollar a year. The term is for 20 years, and the city has option to renew for another 20. The school board then pays the cost of clearing and grading the area. The city installs a sprinkling system, plants or sprigs grass, constructs ball fields, outdoor shelters or a neighborhood building costing approximately \$15,000 and plants trees and shrubs. The city also maintains the facilities and provides a staff for year-round playground operation.

The actual plans for development are prepared by the parks division and approved by the Committee. The entire area is under the jurisdiction of the school during the hours when school is in session (generally from 8 a.m. to 3 p.m.), and under the jurisdiction of the recreation division after school hours.

As I have said, the results have been splendid. Three additional sites are to be ready for playground operation in October. This advanced step in cooperative development and operation by the two separate governmental agencies has gained national recognition by the National Recreation Association. We estimate that it has saved Fort Lauderdale approximately \$105,000."

6. EDUCATION AND INFORMATION

INDUSTRIAL EDUCATIONAL CENTER
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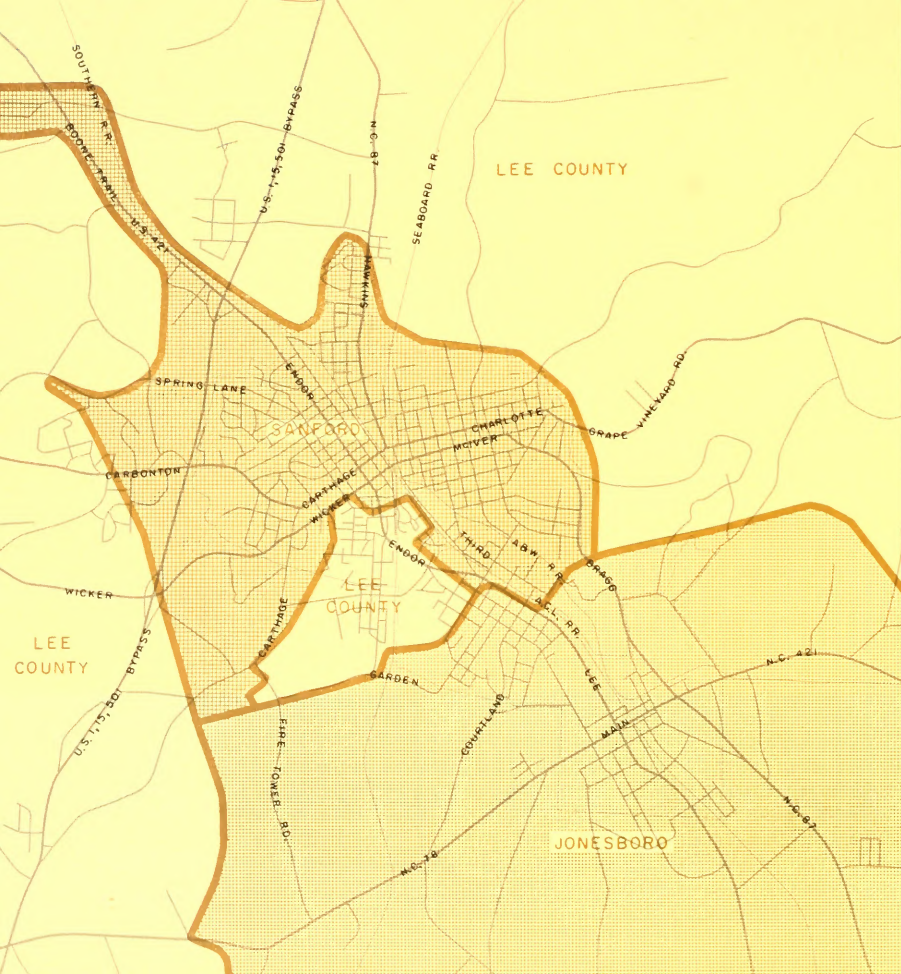
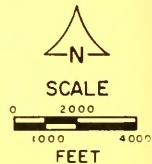


FIGURE 10
SCHOOL DISTRICTS

SANFORD, N.C.



PRIMARY AND SECONDARY SCHOOLS

ADMINISTRATION

The Sanford Planning Area (this area includes Sanford and all land within one mile of the corporate limits) is divided between two "local administrative units" of the State Public School System; one of them is the Sanford School District which is combined with the Jonesboro School District and the other is the Lee County Administrative Unit. The approximate boundaries of these units are shown in Figure 10. The Sanford and Jonesboro School Districts form a single "city administrative unit". They also form a "local tax district"; that is, the property lying within their boundaries is subject to a special tax to supplement State and County school funds.

Local administrative units such as Lee County and the Sanford and Jonesboro City School Districts are provided for in State Law. Charged by the State Constitution with providing "by taxation and otherwise for a general and uniform system of public schools, wherein tuition shall be free of charge to all children of the State between the ages of six and twenty-one years", the General Assembly has done the following:

1. provided for the establishment of state-level and county and city-level policy making and administrative agencies;
2. delegated powers to and imposed duties on these agencies;
3. assigned financial powers and duties with respect to the schools to Board of County Commissioners and County financial officers;
4. passed laws regulating the behavior of members of the general public with respect to the schools (e.g., attendance laws);
5. provided for the collection and expenditures of funds for education by the State government.

The state-level administrative agency is the State Board of Education, and its administrative officer is the State Superintendent of Public Instruction, who in turn heads the State Department of Public Instruction.

The local administrative agencies are the Lee County and Sanford School District Boards of Education, one for each administrative unit. There are three County District Committees, one for each educational subdivision of Lee County outside the Sanford District. There are no District Committees in the Sanford School District. The Boards have Superintendents as administrative officers; the District Committees have Principals as administrative officers.

Within the framework of laws passed by the General Assembly, both state-level and local-level public authorities share in controlling the nature of the educational services and facilities provided in Sanford and Lee County. The boards which share these responsibilities are (1) The State Board of Education; (2) County Boards of Education; (3) City Boards of Education, and (4) Boards of County Commissioners.

Financing the Schools

All expenditures involved in providing local education are classified in three categories:

1. the capital outlay fund;
2. the debt service fund; and
3. the current expense fund.

According to the North Carolina statutes, "the capital outlay fund shall provide for the purchase of sites, the erection of all school buildings properly belonging to school plants, improvement of new school grounds, alteration and addition to buildings, purchase of furniture, equipment, trucks, automobiles, school buses, and other necessary items..."

"The debt service fund shall provide for the payment of principal and interest on indebtedness incurred for school purposes..."

Except for State Capital grants in 1949 and 1953 and Federal contributions for science equipment, the capital outlay fund and debt service fund are financed entirely by local revenues.

The current expense fund covers everything not covered by the capital outlay and debt service funds. It is consistently the most expensive category, including all salaries, wages, operation and maintenance expenses, transportation, etc. State funds are allocated to cover most current expense items sufficiently to provide a minimum educational program, but where economic conditions permit, most current expense funds are supplemented by local revenues. Federal funds for vocational education, science education, pupil testing and guidance and school lunches also contribute to the current expense fund.

The 1959-1960 contributions to the current expenses funds of the two local administrative units were as follows:

	<u>(Sources of Funds(%)</u>		
	<u>State</u>	<u>Federal</u>	<u>Local</u>
Lee County	80.6	5.5	13.8
Sanford District	72.6	3.9	19.9
North Carolina County Average	81.5	4.7	13.8
North Carolina City Average	70.2	3.7	26.1

It seems clear that, although other governmental units share education expenses and in certain ways determine facilities, the public bodies charged with providing and maintaining school sites and buildings are the local Boards of Education and the Board of County Commissioners. The Boards of Education, in drawing up budgets and requests for funds, are expected to recognize and point out current and future deficiencies in school facilities and request funds for their removal; Boards of County Commissioners are expected to recognize the indicated deficiencies and raise and appropriate the necessary revenues.

Sanford Planning Area School Shortages

No attempt will be made here to specify in detail school facility needs in the Sanford Planning Area. But some evidence of current and future needs will be presented, derived from generally accepted standards and from estimates provided by the principals of the schools involved.

The following table indicates the relationship between 1962-1963 enrollment and existing classroom space. The "capacity" of each school's general classroom space is based on a generally accepted maximum class size of 30 pupils. The table also compares the actual size of individual school sites with the maximum considered acceptable for new schools of equal enrollment by the Division of School Plant Planning of the State Department of Public Instruction. Most schools are short of general classroom space. The general increase in enrollment indicates even more shortage will be evident if the existing schools are not expanded or supplemented.

Several of the older schools are clearly short of site space. McIver, St. Clair and Jonesboro schools do not even have sites that meet standards for new schools with minimum enrollments. The sites of these and other schools are too small for the number of pupils that are using them. It is the personal opinion of this reporter that even the newer elementary schools (Williams, Knight, Bragg Street) with their admirably large sites, do not have adequate playspace cleared and leveled to allow the kind

FIGURE 11

EDUCATIONAL FACILITIES (GRADES)

- ① - Bragg Street (1-6)
- ② - Knight (1-6)
- ③ - Williams (1-6)
- ④ - McIver (1-6)
- ⑤ - St. Clair (1-6)
- ⑥ - Proposed (1-6)
- ⑦ - Wicker (1-12)
- ⑧ - Jonesboro (1-9)
- ⑨ - Sanford Jr. High (7-9)
- ⑩ - Sanford Cent. High (9-12)
- ⑪ - Industrial Ed. Center
- ⑫ - City Schools Office
- ⑬ - County Schools Office
- ⑭ - Lee County Library

SANFORD, N.C.



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Table 3: SCHOOL SPACE EVALUATIONS

School	Grades Taught	No. of Class-rooms (general purpose)	Cap-acity*	1962 1963 Enroll-ment	Over Enroll-ment	Rate of Enroll-ment Increase ***	Size of Site (Acres)	Minimum Standard Site Size** (Acres)	Short- age of Site Space (Acres)
Bragg Street	1-6	7	210	207		slow	18	10	
Knight	1-6	7	210	236	26	rapid	14	10	
Williams	1-6	6	180	188	8	rapid	17	10	
McIver	1-6	17	510	565	55	slow	3	12	-9
St. Clair	1-6	12	360	417	57	rapid	6	10	-4
Wicker (County)	1-12	55	1,500	1,330		rapid	20	28	-8
Jonesboro	1-9	23	690	789	99	rapid	6	15	-9
West Elem. (County)****	1-6	20	600	640**	40	rapid	15	15	
Sanford Jr. High	7-9	18	540	602	62	moderate	3	20	-17
Sanford Central High	10-12	20	600	705	-105	moderate	75	20	0
5,136									

*Based on a generally accepted standard of 30 pupils per general purpose classroom.

**Based on recommended standards of N.C. Department of Public Instruction.

***Reported by school principals.

****Proposed.

of games normally played by children whose ages range up to 12 years. (This problem might be attacked cooperatively by the Sanford Recreation Commission and the Boards of Education).

The table covers only two indicators of school facility requirements. Shortages of other related school facilities can be expected. The following specific estimates of current needs were made by school principals:

1. Sanford Central High is currently short six general classrooms and one science classroom.
2. Wicker School needs 10 more classrooms and five acres of land on which to place them.
3. The approaches to several of the schools lack sidewalks, forcing children to walk in busy streets. This is especially undesirable for elementary school pupils. (This is a problem that suggests cooperative efforts by the City of Sanford and the Boards of Education.)

Other Indications of Future Needs

In addition to the indications of school facility shortages above, there are current trends in school organization, attendance rates and local population which must be considered. Each trend indicates a greater need for school facilities:

1. The school age population of the Sanford Planning Area is expected to continue its steady increase, requiring continual additions to the total school plant, regardless of the local distribution of the population. In order to get some idea of the total facility requirements caused by local population expansion, a projection of Average Daily Membership in all schools in Lee County was made based on a forecast of Lee County's population growth provided by the Division of Community Planning.*

*(Current population location trends in Lee County indicate that most of the population and enrollment growth forecast above will occur within one mile of Sanford's present corporate limits, and that almost all of it will be located within two miles of Sanford. This likelihood, because of the present division of this area between two different school administrative units and the changeability of the line that separates them, promises to make the separate planning of school facilities very difficult, to say the least.)

The calculations were based on the assumption that in 1970 the same proportion of children between the ages of 5 and 20 years would be in school as in 1960.

	1960	Est. 1970	Estimated Increase 1960-1970	Classrooms To Be Added 1960-1970
County Population Aged 5-19	8,276	8,882	606	
% of 5-19 aged group in Average Daily Attendance	84%	84%	0%	
Pupils in Average Daily Attendance (whole county)	6,922	7,461	528	18

If the assumptions are correct, population growth alone would require by 1970 the addition of 18 classrooms to the county total required in 1960. (Any shortage existing in 1960 would have to be added to this figure.)

2. The establishment of public kindergartens will increase facility needs regardless of population changes. Public kindergartens are encouraged by State Education Officials, and will probably come to Lee County eventually. Since kindergartens usually operate on a half-day schedule, it might be estimated that kindergartens will require about half the space per pupil as the first grade. In 1962-63 there were 633 first-graders in the schools named in the previous table, who would require 21 general classrooms. Adding an equal number of kindergartens would take, then the equivalent of 10 or 11 general classrooms.

3. A continued decrease in the number of school dropouts in Lee County (including Sanford) will require additional high school classroom space. The potential number of high school seniors in all of Lee County in 1962 had been reduced by 47% by dropouts, but the dropout rate has fortunately been decreasing. The North Carolina dropout rate in 1962 was 48%, which was 20% lower than in 1948. The U.S. dropout rate in 1962 was 40%, down 12% from 1948, and Lee County should reach this low rate before too long. If the dropout rate in Lee County had been equal to the national rate, the 1962 senior high school class would have been 40 pupils larger than it actually was.

4. Educators generally agree that there are too many pupils per teacher in North Carolina schools, especially in the elementary grades. A movement is underway to reduce teacher loads by having the State provide funds for more elementary teachers. It

can be expected that this policy, though necessary, will increase the number of school classrooms required for a given number of elementary (grades 1-6) pupils.

5. The source of the current enrollment pressure on the Knight, Williams, St. Clair, and Jonesboro Schools is the growth of residential development along the western fringe of Sanford's built-up area. This development is expected to continue, and will require additional elementary schools in the near future. County school officials are planning a school to serve part of this area but others will probably be needed. Residential development to the east of Sanford, on the other hand, has been slow, a fact that is reflected in the low enrollment growth rates of the Bragg Street and McIver Schools.

The number, location and size of individual schools is extremely important, not only to the educational process and to the safety and efficiency of pupil travel to and from school, but to other concerns as well. Some of the concerns of both educators and others are indicated below:

1. Number of Schools

The number of separate schools into which the total enrollment is divided affects whether enrollments at individual schools are at the optimum size from an educational point of view. Regardless of the amount of space per pupil, the size of the student body can be too large or too small for the most efficient administration and the best educational experiences. This fact requires that local officials who make decisions on student body sizes keep up-to-date on the latest thinking in this area.

2. Location of Schools

The following are factors which have a direct bearing on school locations:

- a. the cost, in terms of money, time, and danger to pupils, of travel to and from school by bus, private car, and walking. (As population distribution, transportation routes and land uses change, these cost factors change, requiring that the school plant planner be aware of such developments. City plans and planners and Highway Commission officials can be helpful here.)
- b. the cost of providing sewer, water, roads, pavement, and sidewalks to the site. (The cost of these is affected by soil, topography, and distance from the nearest line, road, etc., and the provision of some of these items must be financed or controlled by other public agencies.)

- c. the cost of land grading, building construction, playground improvement and landscaping. (Some sites may be far too costly to grade for playground needs.)
- d. the cost of land acquisition and the amount of land available for the site. (It is a paradox of educational planning, that the greater the need for a school becomes, the less land there is to put it on; and the higher the cost of land becomes. Residential development creates the greatest demand for schools, while the best sites for schools are also the best sites for residences. If land is not set aside early for schools, the public ends up paying first-rate prices for second-rate sites.)
- e. the usefulness of the facility for community recreation. (Multiple use of school facilities is discussed at length in the section of this report entitled Recreation Facilities.)
- f. the amount of mutual distraction between school activities and off-site activities such as residences, factories, etc. (School planners must be sure of the future security of their schools in this respect and must consider the adjacent property owner as well.)

3. Size of Site and Building

The size of the school site, of course, determines the school's ultimate capacity for indoor and outdoor school, recreational, and auxiliary activities and its adaptability to changes in educational requirements.

The size of the site also affects the amount of mutual distraction between school activities and offsite activities. Large sites have a "buffer" effect, and help insure that unpredicted land uses adjacent to the site will not be dangerous or distractive to pupils.

All of the factors mentioned above indicate that planning for schools is not a simple, cut-and-dried task. Some of the factors also indicate that school plant planning can benefit from the participation of agencies with information and responsibilities other than those of the local agencies directly responsible for providing school facilities.

The Division of School Plant Planning of the State Department of Public Instruction suggests that the following persons, among others, be involved in the educational planning process: the superintendent of schools, the board of education, the school's professional staff, an architect, an educational consultant (professional educational system planner), and the city or regional planner.

The Division of School Plant Planning offers high quality planning services to local school administration units. The following studies are made without charge, but may involve the active participation of the local professional school staff:

- "1. Comprehensive surveys, including study of educational program, organization and administration, finance, facilities, personnel and transportation. Such studies are done with the assistance of other Divisions of the Department and the Divisions of the State Board of Education.
2. Organization and facilities studies which provide an evaluation of present facilities with recommendations for use of present buildings and for location and construction of additional facilities. Printed reports are available to agencies requiring this kind of information.
3. Facilities studies which provide an evaluation of existing facilities with recommendations for future use. Typed reports are kept on file in the Division's offices and are available for examination.
4. Site evaluation which provides assistance to the Superintendent and Board of Education in the evaluation of potential sites for future school use. Typed reports are on file in the Division's offices and are available for examination."*

Whether or not local school planners take advantage of the studies named above, the educational planning process can benefit from the participation of local public agencies. The Sanford Planning Board, the City Manager, his planning assistant, and Sanford's planning consultants can provide information on population growth and direction, availability of sewer and water, other land use development, feasibility of providing sidewalks and paving roads, and the effect of schools on land development and traffic circulation. The Planning Board may arrange for zoning changes that will protect schools from the establishment of land uses detrimental to school operation or pupil travel safety. The Sanford Recreation Department is interested in the recreational use potential of school facilities, as noted elsewhere.

*Division of School Plant Planning, N.C. Department of Public Instruction.

LEE COUNTY INDUSTRIAL EDUCATION CENTER

The Lee County Industrial Education Center (IEC) is located near Central High School. Opened in 1962, the Lee County IEC is one of a growing number of these institutions in North Carolina. The basic idea of the IEC's is to provide job training tailored to current job markets. It also provides job-oriented classes for employed persons. Nominal fees are charged for IEC services.

The IEC's standards of personnel, curricula, admissions, and graduation; degree, diploma and certificate policies; and tuitions and fees are controlled by the State Board of Education.

A local Board of Trustees of eight members, four chosen by the Board of County Commissioners and four by the two local Boards of Education, selects the IEC director (with the approval of the State Board) and otherwise is generally responsible for the acquisition of IEC land and buildings and supervising the maintenance of IEC property.

Financial support for the IEC comes from County, State, and Federal funds. State funds and Federal funds provide the salaries and expenses of administrators and instructors and purchase furniture, equipment and library books. County funds are largely allocated to the purchase of land, buildings, and vehicles and the operation and maintenance of these items.

The IEC has a staff of 14 full-time instructors, 15 part-time instructors, and seven administrative and auxiliary personnel. Present enrollment (1963-1964) is about 72 full-time and 234 part-time students and is increasing.

IEC buildings and grounds consist of a 28,000 square foot building on a 28 acre site. Paved parking space for 50 cars is provided.

Facility needs are largely determined by enrollment and type of program. Both factors are expected to require expanding building requirements in the foreseeable future. According to the IEC's Director, 7,800 square feet of additional floor space are already needed, as well as up to 50 new parking places. Enrollment has increased steadily since the Center opened in September of 1962, and is expected to continue increasing. The addition of advanced courses in certain areas, qualifying the IEC as a Technical Institute, is considered a possibility for the near future by the Director. This, he expects, would cause a jump in the rate of enrollment increase, and of course place more pressure on facilities. The land presently allotted to the IEC should be ample for all anticipated expansion.

LEE COUNTY LIBRARY

The Lee County Library utilizes three buildings: the main library on Steele Street and two small branches; one on Wall Street and one in Broadway. The main library contains 4,000 square feet of floor space divided between the upper and lower story. The Lee County Library is governed by a Board of Trustees appointed by the Board of County Commissioners. The Board of Trustees makes library policy subject to budgetary approval by the Board of County Commissioners. The library is financed with Federal, State, County, and Municipal and private funds. The contributions in 1961-1962 were as follows:

Lee County-----	\$ 8,600
City of Sanford-----	3,000
State Aid-----	4,100
Federal Aid-----	800
Other-----	<u>\$ 1,200</u>
	<u>\$17,700</u>

The revenue from Lee County and Sanford is non-tax revenues. In order to start using tax revenues, a special tax election must be held. The special tax rate may not, by statute, exceed 15c per \$100 valuation. (At present valuations, this would put a limit of about \$90,000 on revenue from such special tax in Lee County.)

The Lee County Library is inadequate in several ways, if some minimum standards suggested by the North Carolina Library Association are applied:

1. The library's 26,000 books are only about one-fourth the minimum number (100,000) that should be available to library users.
2. The 2,600 new books ordered by the library each year are about one-half the number recommended (5,000).
3. The 4,000 square feet of floor space in the main library is 9,000 square feet below the standard for counties with the population of Lee County.

The upper floor of the main library building was opened to library uses in 1963 to handle increased space demands. This floor had been closed previously because of its floor, which conducts noise downstairs, and because it requires extra staff effort to supervise. These problems remain. The expanded service of larger quarters makes the present staff load out of proportion to desired standards. At the present rates of growth, the existing quarters will be outgrown in three to four years.

Despite its drawback in other respects, the main library's location, adjacent to the Central Business District, is a desirable one. Unfortunately, the present site gives no room for expansion, and there is no off-street parking available nearby.

North Carolina public libraries on the whole are underfinanced. While the library expenditure per capita in the United States was estimated at over \$3.00 for fiscal year 1961-1962, North Carolina spent only 84¢ per capita. In the same fiscal year, Lee County's library received only 66¢ per capita, in spite of the fact that Lee County's per capita income is about equal to that of North Carolina.

The trustees of the North Carolina State Library, who are responsible for allocating Federal and State financial aid to local public libraries, recognizes the underfinanced situation of these libraries. They recommend in order to make a reasonable number of books available to local readers, that "regional" library systems be established to include several counties which contain at least 50,000 people. Under such a system, the books of each of the member libraries can be exchanged. Such a regional system would be governed by a board of trustees chosen by the governing bodies of the participating counties or municipalities, as set out in State enabling legislation, but member libraries would retain their identities. Several such systems are now operating in North Carolina; to encourage more of them, the trustees of the State Library have adopted rules for the allotment of Federal and State library funds which favor regional systems.

The need for library books and space, unlike other facilities such as water mains, sewer mains, and schools, should not be measured entirely by demand. A spacious, quiet library, fully stocked with books, can create its own demand.

The Lee County Library Board, working with professional library planners and the Sanford Planning Board, shall prepare plans now for relocating the library in adequate quarters and for bringing the library up to standard. It is suggested that a library location near the Lee County Courthouse might be desirable; located there the library would be near the center of its service population.

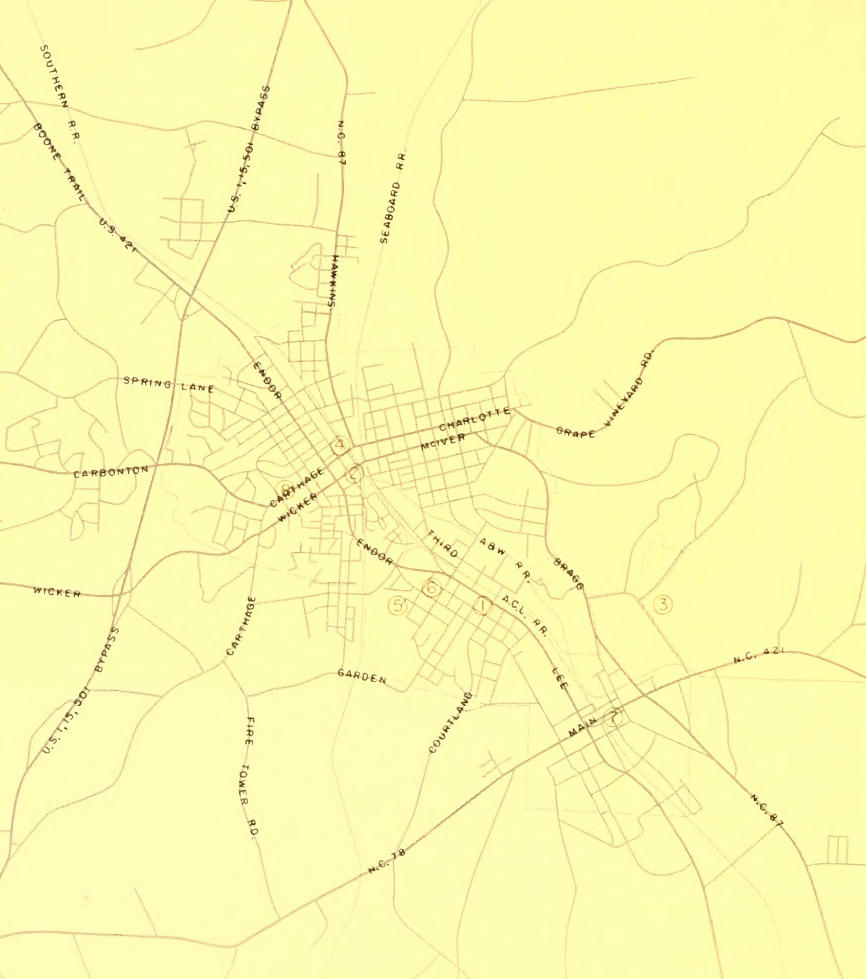
7. HEALTH AND WELFARE

- COUNTY HOME - HEALTH CENTER - HOSPITAL
DEPARTMENT - HEALTH CLINIC - WELFARE

FIGURE 12

NON MUNICIPAL FACILITY

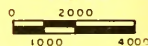
- ① - County Courthouse Jail
- ② - Steele St. Annex
- ③ - County Home
- ④ - Library
- ⑤ - Welfare Department
- ⑥ - Health Center
- ⑦ - Mental Health Clinic
- ⑧ - County Hospital



SANFORD, N.C.



SCALE



FEET

LEE COUNTY HEALTH CENTER

The Lee County Health Center is utilized by the Lee County Health Department in performing its function of protecting the health of the county's population. The Lee County Health Department is the local unit of a five-county Health District. The Departments of this District are governed by a District Board of Health with representatives drawn from each county, and the county departments share a single director, an assistant director, central clerical personnel and three field health workers, a physical therapist, a venereal disease investigator and a health educator. The District office is in Chapel Hill.

The State Board of Health exercises some control over local health department activities: local departments may be required to enforce health rules and regulations laid down by the State Board, and the State Board may stipulate the conditions under which certain State and Federal funds shall be allotted to the local health departments.

Budgetary control of the Health Department is in the hands of the Board of County Commissioners. County Boards of Commissioners are authorized by statute to levy a special tax to finance the Health Department, and Lee County's Board has done so. Federal funds are contributed for the general public health program. The State Board of Health allocates State and Federal funds on a basis other than matching of local funds, except that a cut in a local budget is matched dollar for dollar by a cut in the State Board's allocation. The respective shares in Lee County's health services budget of \$35,740 in 1962-1963 were: Lee County - 69 percent; State - 27 percent; and Federal - 4 percent.

The construction of the Lee County Health Center building was financed by Lee County with the assistance of Federal "Hill Burton" funds dispursed by the State Medical Care Commission. Federal contributions were provided on a matching basis in such a way that the county put up 55% of the cost and Hill Burton funds 45%. The building site was donated to the Department by a private citizen.

The Health Center, at Makepeace Street, consists of a one-story building with 2,000 square feet of floor space, placed on a one-acre land parcel. The present permanent staff at the Health Center consists of four public health nurses, one sanitarian, one full-time clerk and one part-time clerk.

In addition to being used for the office and laboratory activities of the local Health Department staff, the Health Center is also used for clinical services for indigent persons. Arrangements have been made for persons certified by the Lee County Welfare Department to receive medical services performed by private physicians in a

maternity and child care clinic and a general medical care clinic held at the Health Center. Dental diagnosis and treatment is also performed at the Center.

Current and Future Facility Needs

According to the District Health Director, two developments will require an expansion of the Lee County Health Center building: (1) the present inadequacy of space for clinical and staff office activities, and (2) the need for additional staff personnel occasioned by the county's expanding population. There is a current need for four additional nurses, and one each of the following: sanitarian, physical therapist, and health educator.

A doubling of the Health Center's present internal space would not be excessive. A considerable increase in the Health Department's budget would be necessary to cover the above expansion. Assistance for the physical expansion of the Health Center may be available from Hill Burton funds administered by the North Carolina Medical Care Commission. The one acre site of the Health Center will be sufficient for the Center's building expansion and parking needs of the foreseeable future.

The Health Director considers the present location of the Center an excellent one for several reasons: it is centrally located relative to the urban and rural population of the County; it is convenient to the greatest concentration of indigent persons in the City, and it is only a few steps from the Lee County School Superintendent's office and the County Welfare Department office. The nearness of the latter agency office facilitates school health program planning and the administration of medical services financed by the public to persons certified by the Welfare Department. The Director feels that it would have been desirable to have the Health Center, the Lee County Hospital, and the new Mental Health Clinic in close proximity to one another; however, he feels that since the Hospital and Health Center have been established at separate locations, the location of the Mental Health Clinic adjacent to the Hospital is acceptable.

LEE COUNTY HOSPITAL

The Lee County Hospital is a "general hospital," that is, one which is largely devoted to in-patient medical or surgical care for acute illness, injury, and obstetrics.

The Lee County Hospital is governed by a Board of Hospital Trustees, the members of which are elected at general elections. The Board has exclusive control over the expenditure of all money collected to the credit of the hospital fund, the purchase of

sites and buildings, and the supervision, care and custody of grounds and buildings purchased or leased. The Board appoints the Hospital Administrator and his assistants.

Although it charges full fees for its services, the Hospital is open to all persons regardless of their ability to pay. The care of the medically indigent is financed with Federal, State and County funds administered by the Lee County Department of Welfare.

The Hospital building, at the intersection of Carthage Street and Hillcrest Drive, occupies a site of five acres. The site is shared by a dormitory for nurses. Across Hillcrest Drive, the Hospital has a parking lot for 60 cars. The Hospital has 134 beds, 62 of them the result of a recently completed expansion project.

According to the Hospital Administrator, the recent expansion of the Hospital is expected to meet space demands for several years. To handle space requirements beyond present capacity, plans have been made to construct another wing on the Carthage Street side to provide space for approximately 65 additional beds.

MENTAL HEALTH CLINIC

The Mental Health Clinic of Sanford and Lee County, Incorporated, was established under private sponsorship to provide mental health services to people of the County regardless of their ability to pay. The Clinic has been operating in leased space at 106 West Main Street in Jonesboro. Staffed by part-time and full-time professional mental health workers, the Clinic provides services of both diagnosis and treatment. Expenses not covered by fees have been paid by contributions from the following sources: Community Fund - 40 percent; State and Federal - 50 percent; and Lee County - 10 percent. Beginning July 1, 1964, additional public funds will be required to replace the funds formerly provided by the Community Fund. The Clinic has experienced a growing demand for its services that requires an expansion of both facilities and staff time.

At the present time consideration is being given to constructing a new clinic building on the grounds of the Lee County Hospital. There are indications at the local, state, and national level that there is a need for full-staffed, fully-equipped local mental health centers. At the national level, recent health facility planning literature, sponsored by the U.S. Public Health Service and the American Hospital Association cites the gross shortage of mental health facilities and personnel and the growing recognition of the value of mental illness treatment at the community level as opposed to treatment at isolated institutions far from the patient's community.

At the state level, mental health affairs have been elevated to Department level. The same 1963 legislation that created the new Department of Mental Health specifically encourages the creation of Local Mental Health Clinics by any local group, public or private, that is capable of rallying the local share of the necessary financial support. Federal and State funds will provide two-thirds of the first \$30,000 and one-half of any amount above that figure to pay for land, buildings, equipment, supplies, secretarial services, maintenance, and professional staff salaries.

The idea of placing the new clinic building adjacent to the Lee County Hospital is supported by professional recommendations. The Surgeon General's Ad Hoc Committee on Planning for Mental Health Facilities notes "the desirability of programming both short-term and long-term mental health facilities as a part of or in close proximity to a general hospital or other community health facilities. The advantages occurring from this arrangement -- mutual availability of specialized services, avoidance of duplication of facilities, and the sharing of scarce professional personnel and equipment -- can readily be envisioned..." The Committee also stresses the need for coordinated planning of both programs and facilities of all public health activities to avoid both gaps in coverage and unnecessary duplication.

LEE COUNTY WELFARE DEPARTMENT

The Lee County Welfare Department consists of a County Board of Welfare, a Welfare Director, and a staff of clerical workers and caseworkers. The County Board of Welfare consists of three members; one chosen by the Board of County Commissioners, one by the State Board of Public Welfare, and one by the other two members. The County Board of Welfare selects the local Director of Welfare, and the Director selects his staff according to State Merit System procedures. The number of employees on the Department Staff and their salaries are decided by the Board of County Commissioners.

For purposes of this discussion the activities of the County Welfare Director and his staff can be classified as follows:

1. making payments to or for needy persons under financial assistance programs financed by Federal (80%), State (10%), and County (10%) governments;
2. performing the investigative, counseling and guidance activities, involved in administration of those payments; and
3. performing many other functions not connected with financial assistance.

Most of the functions carried out by the staff of the County Welfare Department are selected and supervised by the State Board of Public Welfare. The County Board of Public Welfare passes on the acceptance of applicants for financial assistance, and approves the Department's budget for submission to the Board of County Commissioners, but otherwise acts chiefly in an advisory capacity. The Board of County Commissioners finances and supervises a financial assistance program for persons not eligible for the joint programs. This program is administered by the Welfare Department as is the classification of indigent persons for county-financed care at the Lee County Health Center clinics.

The funds available from all sources for the financial assistance and other programs of the Welfare Department vary with the County appropriations for them since State and Federal funds are provided on a "matching" basis. Besides their contributions to individual payments under financial assistance programs, Federal funds will match county funds dollar for dollar for the administrative costs of these programs. Administrative costs of the remaining activities of the County Welfare Department are borne completely by the County. (On the average, North Carolina Counties pay 60% of all local administrative costs, Federal, 33%, and State, 7%, on an equalizing basis.) The provision of facilities is, of course, an administrative cost.

The personnel of the Welfare Department, consisting of the Director, three clerks, and six caseworkers, occupy a converted one-story residence of recent construction at 909 Martin Street. Parking for ten cars is provided in an adjacent lot. The Welfare Department's building, acquired and maintained by the Board of County Commissioners, is used for client interviews and consultation and staff and board meetings as well as conventional office operations.

Current and Future Requirements

The Director of the Lee County Welfare Department reports (September, 1963) that, although three more caseworkers would be justified to lower the case-loads of the present staff, indoor space in the Welfare Department building is expected to be adequate for the immediate future. However, the ten off-street parking spaces provided adjacent to the building are reported to be too few for staff and visitors.

The Welfare Director finds that the location of the Welfare building with respect to the general population and to certain other local agencies is important. The present location of the Welfare Building relative to the general population is good, it is fairly central to the rural and urban population of the County, and it is within reasonable walking distance of the largest concentration of indigent persons in the urban area. This last fact is especially important because the people to whom welfare aid is most crucial have no cars.

The closeness of the Welfare Building to the Lee County Health Center is advantageous; indigent persons who seek treatment at the Health Center clinics must be certified by the Welfare Department; and, because of the closely-related nature of their services, the Health and Welfare Departments hold frequent joint staff meetings for staff education and program coordination.

As the Investigation Officer and Chief Probation Officer for Juvenile Court, the Welfare Director feels that less distance between the Courthouse, Sanford Police headquarters, and the Welfare office would improve the efficiency and effectiveness of juvenile case handling.

LEE COUNTY HOME

Lee County owns and operates a home for elderly persons. It is located in a large, old residence-styled structure on Nash Street near Central High School.

The Home, governed by the Board of County Commissioners and supported by County taxes, has a staff of five persons and at present has 8 aging persons in residence. Some of the Home's residents pay for the services rendered them, others are without financial resources.

According to the Chairman of the Board of County Commissioners, the future of the building as a home for the aged is uncertain. Alternative means of providing homes for the aged, and income for those of the aged who are needy have become available through Federal, State, and County programs of financial assistance and the development of licensed private boarding and nursing homes. Presently at issue is whether current and potential residents of the Home, as well as the County taxpayer, will be better off under the present arrangement or another. (As residents of a public institution, the indigent residents of the Home are ineligible for Federal and State assistance payments for ordinary needs or hospitalization.)

8. OTHER MUNICIPAL FACILITIES

CITY HALL - CITY GARAGE - CEMETERIES

FIGURE 1

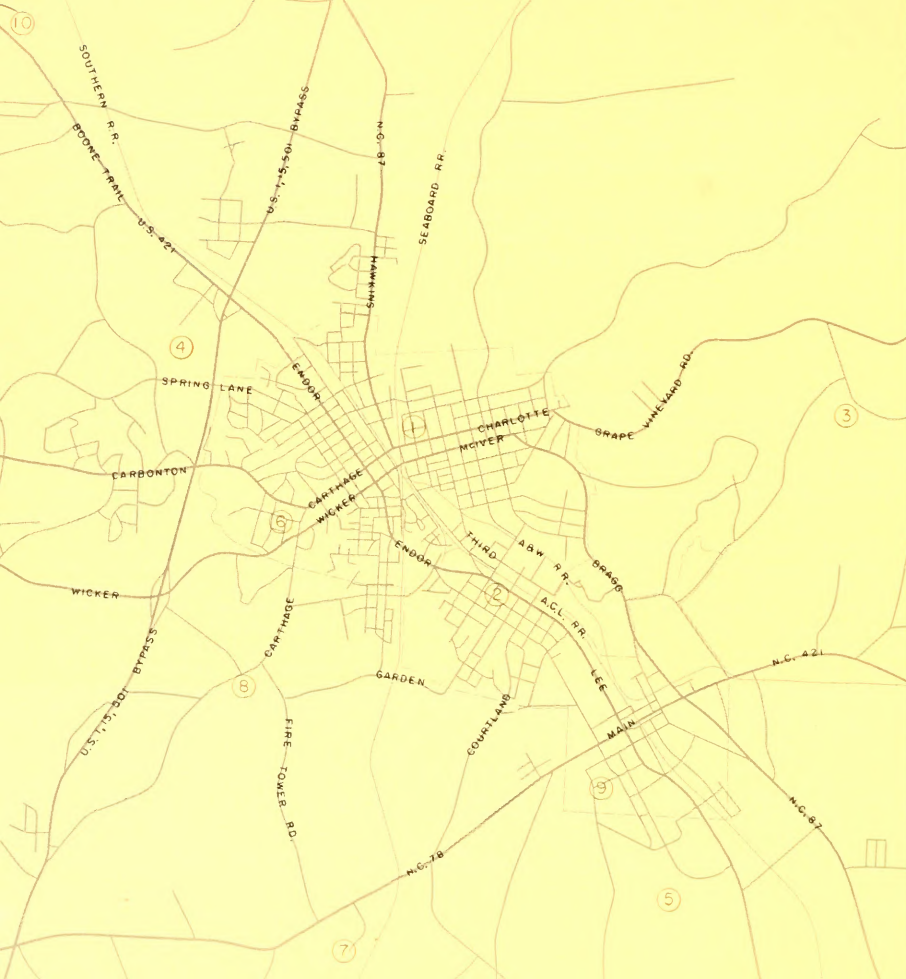
MUNICIPAL FACILITIES

- ① - City Hall
Fire HQ
Police HQ
Fire Station # 1
City Service Shop
- ② - Fire Station # 2
- ③ - Water Treatment Plant
- ④ - Spring Lane Sewage Plant
- ⑤ - Jonesboro Sewage Plant
- ⑥ - Recreation Office
- ⑦ - Airport
- ⑧ - Buffalo Cemetery
- ⑨ - Jonesboro Cemetery
- ⑩ - City Dump

SANFORD, N.C.



SCALE



CITY HALL

The present City Hall building is some 60 years old and is not expected to be adequate for City purposes for much more than ten more years. Tentative plans call for constructing a new city hall on land adjacent to the Lee County Courthouse property when the present City Hall becomes inadequate. In the meantime, present urgent needs are being met by internal modifications of the present structure. The upper level of the City Hall has been recently renovated and is expected to provide adequate space for the activities it presently houses until the new City Hall is built.

In the street-level portion of the City Hall, occupied by the City Clerk, the Police Department and part of the Fire Department, some changes will be necessary. The Fire Department will be moving out to new quarters, for reasons discussed in the section of this report on Fire Department Facilities. The City Clerk's office has adequate space for the immediate future, but the Police Department is in need of additional space. This situation suggests that, in the forthcoming renovation of the street-level portion of the City Hall, space can be reallocated to satisfy the needs of both the City Clerk's office and the Police Department until the City Hall is relocated.

The parking and service lot across Charlotte Street from City Hall is expected to provide ample employee and visitor parking for the remaining life of the present City Hall.

It is not too soon to choose the site and acquire the property on which the new City Hall will be built. Savings in land costs and disappointments will probably exceed any tax losses.

CITY GARAGE AND SERVICE LOT

The City owns approximately 1.5 acres of land across Charlotte Street from City Hall which it uses for various purposes. Part of it supports a row of structures used for the storage and servicing of City equipment and vehicles. The unsheltered portion is used for storing City road equipment and as a parking lot for the vehicles of the various departments and cars of City Hall employees. The unsheltered area has recently been blacktopped and is expected to be adequate for several years. The rather crude service and storage sheds will be replaced by more attractive structures in the near future.

The location of the equipment storage and servicing operations of the City is satisfactory in that it is adjacent to City Hall, is central and yet lies in an area of the City which does not suffer from its necessarily unrefined appearance and activities. Although the City Hall operation may eventually move elsewhere, the garage and heavy equipment storage facilities do not have to follow.

CEMETERIES

The City of Sanford maintains two cemeteries as a public service: the Buffalo Cemetery and the Jonesboro Cemetery. Their locations are shown in Figure 1. General supervision of the cemeteries is the responsibility of the Cemetery Commission, appointed by the Board of Aldermen. The Public Works Department administers the sale of lots and employs two men in cemetery maintenance.

The City contributes about \$10,000 per year to the maintenance of the cemeteries. Part of this expense is earmarked for an accumulating fund which, in a few years, is expected to be earning enough interest to maintain the cemeteries without city support.

The present supply of cemetery lots is expected to be adequate for many years. A private cemetery north of the City is also available for local residents.

9. OTHER NON-MUNICIPAL FACILITIES

COURTHOUSE - STEELE STREET ANNEX - JAIL

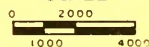
NONMUNICIPAL FACILITIES

- ① - County Courthouse Jail
- ② - Steele St. Annex
- ③ - County Home
- ④ - Library
- ⑤ - Welfare Department
- ⑥ - Health Center
- ⑦ - Mental Health Clinic
- ⑧ - County Hospital

SANFORD, N. C.



SCALE



FEET

COUNTY COURTHOUSE

The Lee County Courthouse is located on a 4.5 acre block on Lee Avenue, near Sanford's geographic center. The original building contains approximately 7,000 square feet of floor space divided between two floors; a recent addition enlarged the building by 5,000 square feet. A one-acre parking lot adjacent to the Courthouse has space for 100 cars.

The Courthouse provides space for proceedings of the courts, meetings of the Board of County Commissioners, meetings of other boards, and for the administrative activities of County government. The Courthouse houses the following offices and employees: Sheriff (6); Clerk of Court (4); Register of Deeds (3); County Accountant (2); Tax Supervisor (2); Tax Collector (2); Veterans' Service (2); Social Security (1); and Janitor (1).

The Chairman of the Board of County Commissioners reports that the staff of some of the above offices will be expanded in one or two years. More help is needed in the Accountant's Office and the Tax Supervisor's Office; the Sheriff needs more deputies; and a building superintendent is needed.

The Chairman feels that, although more personnel will be added to the Courthouse staff, the space provided by the present building, with some internal reallocation, will be adequate for the foreseeable future. If building expansion is required, there is room for it on the Courthouse grounds.

STEELE STREET ANNEX

The County owns a two-story building on Steele Street, across from the Methodist Church is downtown Sanford. The building provides office space for the various public agencies serving the farmers of Lee County, including: County Farm Agent; County Home Demonstration Agent; U.S. Soil Conservation Service; U.S. Agricultural Stabilization and Conservation Service; and Farmer's Home Administration. The County provides space for the Federal agencies in order that County farmers can receive their services. Twenty persons are employed in the agencies housed in the Annex.

The Chairman of the Board of County Commissioners reports that, although physical structure of the Annex is satisfactory, the activities carried on in the building are in need of several hundred more square feet of floor space and off-street parking for up to 100 cars is needed.

The Chairman feels that, because the Annex primarily serves rural residents, it may not be necessary to maintain these agency offices in downtown Sanford. The Lee County Home is being considered for possible conversion to the use of these offices; however, conversion of it to an office building may not be practical. Construction of a County office building adjacent to the Lee County Courthouse may be the most practical solution to the problem.

COUNTY JAIL

The Lee County Jail is used to hold prisoners apprehended by the Sheriff's Department, the Sanford Police Department, ABC officers, and the State Highway Patrol.

The jail is governed by the Board of County Commissioners, supported by County revenues, and is in the custody of the Sheriff, as provided by State law. State law also places responsibility for inspecting and suggesting improvements to jails on the State Board of Public Welfare; any plans for new jails or improvements to existing jails must be approved by this agency.

The jail is staffed by the jailer and his wife, who reside in a portion of the jail designed for such purposes, and by a cook. The jailer's quarters, containing five rooms, is presently being renovated.

The lock-up portion of the jail which was enlarged in 1963 contains ten cells:

<u>Type of Cell</u>	<u>Number of Cells</u>	<u>Total Capacity</u>
Male	6	38
Female	2	8
<u>Juvenile</u>	<u>2</u>	<u>4</u>
Total	10	50

According to the jailer, the cell capacity of the jail is only adequate for current needs. There seems to be ample land space near the jail for future building expansion.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

MUNICIPAL FACILITIES

Sanford Police Department Facilities

The Police Department needs additional indoor space. According to present thinking, the Department's quarters will sooner or later be relocated to the vicinity of the Lee County Courthouse, along with the general offices of City Hall. To facilitate combined housing of City Hall and Police Department offices in the new City Hall when it is finally built, it is recommended that temporary reallocations of present City Hall space be made to meet the Police Department's immediate needs. The space obtained when the Fire Department abandons the City Hall may fill these needs.

Sanford Fire Department Facilities

The Fire Department needs more indoor and outdoor space for additional personnel and training activities, and it needs more reliable access to the northwest side of the city. Preliminary inspections indicate that space and location requirements for the foreseeable future could be met by abandoning the City Hall station and building a single new station somewhere west of the Seaboard Airline tracks and north of the Central Business District.

Sanitary Sewer Facilities

Sanford's future population and industrial growth will apparently exceed the present capacity of municipal sewage treatment facilities within 2 or 3 years.

A strategic pipe in the sewage collection system has already reached capacity under present conditions of sewage flow.

The topography of the Sanford Planning Area divides this Area into several drainage basins, each of which would require a separate sewage collection and treatment system if it were to be substantially developed, so choices must be made on which areas are to be served with municipal sewer service, and on what terms.

Future land development can be guided in ways that reduce public expenses for sewers and other public facilities if sewer extension policies are drawn up with these goals in mind.

Certain already existing overcrowded neighborhoods will not get the public sewers that are necessary unless City and County authorities take the initiative.

It is recommended that the City of Sanford authorize a comprehensive study of its existing and potential sanitary waste disposal systems to gather the information necessary to 1) solve present and imminent sewer system problems, and 2) provide a basis for a general sewer extension policy and 3) provide a basis for specific programs for sewer facilities construction. It is believed that such a course of action will save the City money and will help achieve the goals of the Land Use Plan.

Water Service Facilities

Continued growth of demand for industrial and domestic uses will soon require expansion of Sanford's filtration plant.

The same growth in demand, as well as growth in population and value of structures, may or may not require expansion of elevated storage facilities to handle ordinary demand fluctuations as well as fire-fighting needs.

Extension of the water distribution system to new areas will continue; wise extension policies and planned extension programs offer benefits in municipal economy and efficiency.

It is recommended that 1) the City direct its engineering consultants to prepare plans for water treatment and storage facilities which will be adequate for future demands, and 2) the City's water service extension policy and programs be made consistent with the findings of the proposed comprehensive sewer study, the City's Subdivision Regulations and the Zoning Ordinance. This latter course of action will save the City money and will help achieve the basic aim of the Land Use Plan: guiding urban growth in the most desirable direction and pattern.

Storm Drainage Facilities

It is recommended that: 1) storm drainage facility planning begin with the collection and organization of a systematic record of Sanford's present storm drainage system, including man-made and natural water-courses, 2) land subdividers and developers be required to install facilities to handle the storm water runoff that results from their developments, 3) the City of Sanford adopt a "sewer use ordinance" to halt and prevent the contamination of surface drainage in the City, and 4) that the City take advantage of the recreation and beauty potential of its natural watercourses.

Refuse Disposal Facilities

At present the City of Sanford uses an open dump six miles from the City to dispose of refuse. Open dumps are not recommended by the State Board of Health because they breed and support disease-carrying insects and animals. The State Board of Health recommends, as a satisfactory and economical alternative to the open dump, the use of a "sanitary landfill".

It is recommended that the City of Sanford establish a sanitary landfill operation, using the free expert consulting services of the Sanitary Engineering Division of the State Board of Health.

Sanford Municipal Airport

Sanford's new airport has been planned to provide for handling the landing, take-off, and ground movement of all aircraft (up to the size of a DC-3) that are expected to use the airport over the next seven years.

Besides the wise execution of the plan mentioned above, there remains the task of ensuring that airport activities remain in harmony with the other activities carried on in the Planning Area. This latter task will involve 1) a moderate amount of further study by the City's planning consultants, 2) the establishment of Airport Zoning Regulations to protect aircraft from surface hazards, and 3) the establishment of conventional zoning around the airport to protect surface activities from aircraft nuisances.

Recreation Facilities

Recreation facilities in Sanford are clearly in need of expansion and improvement. There are many sources of financial and technical assistance for the improvement of public recreation facilities. The community as a whole also has at its disposal underutilized school property and undeveloped land and water resources that should be used for the whole community to enjoy.

Comprehensive recreation planning has contributed in the past to Sanford's present stock of facilities and services and can do so again if such planning is taken up again. Such planning should be sponsored by the Sanford Park and Recreation Commission, with wide public and private participation and expert professional counsel.

City Hall

The present City Hall building is expected to last another 10 years. The only tenant of the building that needs additional space at the present time is the Police Department. The Fire Department shall be leaving the building for new quarters in the next few years. This move, combined with some reshuffling of street-level space, may meet the Police Department's needs for the life of the present building.

Tentative plans call for a new City Hall to be located near the present Lee County Courthouse. Successful fulfillment of these plans will require early choice and acquisition of the necessary land.

City Garage and Service Lot

The city garage and service lot across Charlotte Street from City Hall is expected to be adequate for its present uses for the next ten years. When the relocation of City Hall occurs, the lot can still be usefully retained for storing and servicing the City's heavy equipment. The presently inadequate service and storage sheds will be replaced by more attractive structures in the near future.

Municipal Cemeteries

The present supply of lots in the municipal cemeteries should be adequate for many years.

NONMUNICIPAL FACILITIES

Elementary and Secondary Education

Several factors indicate a need for substantial increase in the school plant of the Sanford Planning Area over the next several years:

1. Growing school-age population
2. Declining drop-out rate
3. Higher teacher-pupil ratios
4. Public kindergartens
5. Present space shortages

As in the past, provision of the necessary school buildings will depend upon the willingness of local taxpayers to foot the bill.

Valuable technical assistance and information relevant to school planning is available from the State Department of Public Instruction.

School facilities, municipal facilities and other land uses affect each other strongly, making it desirable for the officials who plan these items to keep each other informed of their plans.

Lee County Industrial Education Center

Enrollment of the IEC has increased markedly since it opened in September of 1962. According to the IEC's Director, additional classrooms and more parking surface are already necessary. Enrollment is expected to increase in the future as a result of a broader curriculum.

Lee County Library

The library suffers from an inadequate building and site and a current expense budget that is too small to provide minimum standard materials. Plans are now underway to build a new library and bring materials up to standard.

Lee County Health Center

The Lee County Health Center is far too small for its present staff and for the clinical activities carried on there.

Mental Health Clinic

Planning is underway for a new Mental Health Clinic building on the grounds of the Lee County Hospital.

Indoor space at the Welfare Department's building is reported to be sufficient for the immediate future, but parking needs will require more land.

Lee County Home

The future disposition of the County Home is under consideration by the Board of County Commissioners.

Lee County Courthouse

The Chairman of the Board of County Commissioners reports that the Courthouse building and grounds provide enough space for the foreseeable future.

Steele Street Annex

The Chairman of the Board of County Commissioners reports that, although the physical structure of the Annex is satisfactory, the activities carried on in the building are in need of several hundred square feet of floor space plus off-street parking for up to 100 cars. A new county office building, on the Courthouse grounds, is under consideration as a solution to the Annex space problem.

Lee County Jail

According to the jailer, the recently expanded cell capacity of the jail is only adequate for the present level of occupancy; any increases in the average number of inmates will require additional cells.

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